API Well Number: 43047554160000

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 3
AMENDED REPORT ☑

APPLICATION FOR PERMIT TO DRILL

1. WELL NAME and NUMBER
Thurston 12-31-7-21

2. TYPE OF WORK
DRILL NEW WELL ◉ REENTER P&A WELL ○ DEEPEN WELL ○

3. FIELD OR WILDCAT
UNDESIGNATED

4. TYPE OF WELL
Oil Well Coalbed Methane Well: NO

5. UNIT or COMMUNITIZATION AGREEMENT NAME

6. NAME OF OPERATOR
DEL-RIO RESOURCES INC

7. OPERATOR PHONE
970 254-3114

8. ADDRESS OF OPERATOR
P.O. Box 459, Vernal, UT, 84078

9. OPERATOR E-MAIL
allinpro@bresnan.net

10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)
ML-52016

11. MINERAL OWNERSHIP
FEDERAL ○ INDIAN ○ STATE ◉ FEE ○

12. SURFACE OWNERSHIP
FEDERAL ◉ INDIAN ○ STATE ○ FEE ○

13. NAME OF SURFACE OWNER (if box 12 = 'fee')

14. SURFACE OWNER PHONE (if box 12 = 'fee')

15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')

16. SURFACE OWNER E-MAIL (if box 12 = 'fee')

17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')

18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS
YES ○ (Submit Commingling Application) NO ◉

19. SLANT
VERTICAL ◉ DIRECTIONAL ○ HORIZONTAL ○

20. LOCATION OF WELL	FOOTAGES	QTR-QTR	SECTION	TOWNSHIP	RANGE	MERIDIAN
LOCATION AT SURFACE	1995 FSL 639 FWL	NWSW	31	7.0 S	21.0 E	S
Top of Uppermost Producing Zone	1995 FSL 639 FWL	NWSW	31	7.0 S	21.0 E	S
At Total Depth	1995 FSL 639 FWL	NWSW	31	7.0 S	21.0 E	S

21. COUNTY
UINTAH

22. DISTANCE TO NEAREST LEASE LINE (Feet)
639

23. NUMBER OF ACRES IN DRILLING UNIT
40

25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)
1100

26. PROPOSED DEPTH
MD: 9000 TVD: 9000

27. ELEVATION - GROUND LEVEL
4668

28. BOND NUMBER
8734397758

29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE
Municipal

Hole, Casing, and Cement Information

String	Hole Size	Casing Size	Length	Weight	Grade & Thread	Max Mud Wt.	Cement	Sacks	Yield	Weight
COND	22	16	0 - 80	65.0	H-40 ST&C	8.3	Class A	93	1.18	15.6
SURF	12.25	8.625	0 - 1050	24.0	J-55 ST&C	8.4	Class G	417	1.56	14.6
PROD	7.875	5.5	0 - 9000	17.0	J-55 LT&C	8.8	50/50 Poz	1371	1.24	14.35

ATTACHMENTS

VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES

- ☑ WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER
- ☑ COMPLETE DRILLING PLAN
- ☑ AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)
- ☑ FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER
- ☐ DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)
- ☑ TOPOGRAPHICAL MAP

NAME David L. Allin **TITLE** Vice President/Exploration Mgr **PHONE** 970 254-3114

SIGNATURE **DATE** 07/17/2015 **EMAIL** allinpro@bresnan.net

API NUMBER ASSIGNED
43047554160000

APPROVAL
Permit Manager

RECEIVED: August 10, 2015

Complete Drilling Plan ("CDP") Attachment to Form 3 and Compliance Checklist Submittal for
Del-Rio Resources, Inc. Proposed **Thurston 12-31-7-21**
Oil Well on Utah SITLA ML 52016 and Federal Surface Administered by U.S. Fish and Wildlife Service
1995' fsl 639' fwl, Lot 8 (Part NWSW), Section 31, T7S, R21E, SLB&M, Uintah County, Utah
R649-3-2 Regular Location

R649-3-4.1 & 2 See **Form 3, Application for Permit to Drill ("APD")** submitted to the Utah Division of Oil, Gas and Mining ("DOGM") for approval herewith and submissions below itemized by the applicable subsections of the Utah Administrative Code entitled Rule R649-3 Drilling and Operating Practices ("Rules").

R649-3-4.2.1 For additional information the APD author, David L. Allin, Vice President-Exploration for Del-Rio Resources, Inc., can be reached in Grand Junction, Colorado by telephone at (970) 254-3114 and/or by email using allinpro@bresnan.net. An alternative contact with the lessee, Thurston Energy, LLC is Chris Curton, COO, who can be reached at (720) 308-0306 and/or by email using ccurton@thurstonenergy.com. **Note current address for Thurston Energy, LLC is 4925 Greenville Avenue, Suite 800, Dallas, TX 75206.**

R649-3-4.2.2 The lease is Utah state (mineral) land issued to Thurston Energy, LLC under School and Institutional Trust Lands Administration (SITLA) Mineral Lease No. ML 52016 as depicted by **Thurston 12-31-7-21 Form 3 CDP Attachment A-Lease Plat** and is the only land leased in Section 31, T7S, R21E, SLB&M for oil and gas.

R649-3-4.2.3 The proposed well is not located within the exterior boundaries of a unit.

R649-3-4.2.4 The location of the proposed well as staked in the field is depicted by **Thurston 12-31-7-21 Survey Packet (9-12-14) Sheet 2 Legal Plat** produced by Timberline Engineering & Land Surveying.

R649-3-4.2.5 The Applicant will import water as needed by truck to the site from a municipal water source in Vernal, Utah. Water from sources requiring Utah Division of Water Rights approval will not be utilized.

R649-3-4.2.6 Elements of the proposed drilling program are itemized below.

R649-3-4.2.6.1 Estimated tops of important geologic markers at depths below ground level elevation 4668' above mean sea level and notation of contents per R649-3-4.2.6.2:

Formation	Top Depth	Contents
Uinta Formation	Surface	Brackish water
Green River Formation		
Parachute Creek	2815'	Oil shale, oil, brine wtr
Garden Gulch	4891'	Oil shale, O&G, brine wtr
Douglas Creek	5748'	O&G, brine wtr
Uteland Butte	6543'	O&G, brine wtr
Wasatch formation	6693'	O&G, brine wtr
TD	9000'	

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R649-3-4.2.6.2 Prediction and protection of water, oil, gas, or other mineral-bearing formations. The modern riparian river gravels of the Green River contain fresh water, but this well is situated 700' horizontally from the modern 100-year flood plain of the Green River where such gravel aquifers are present (refer to **Thurston 12-31-7-21 Form 3 CDP Attachment A-Lease Plat**). The substrate immediately beneath the thin soil at the proposed well location is composed of weathered Uinta Formation with a substantial clay component making it an aquitard. It is likely that brackish water will be present in porous layers of the deeper Uinta Formation. The base of moderately saline water is expected near the top of the Green River Formation near 2800' with the Birds Nest zone heavy brine aquifer a few hundred feet below that. That depth roughly corresponds with the mapped depth to the base of moderately saline groundwater in Utah Geological Survey (UGS) Special Study 144 (2012). Surface casing will be set at 1050' below GL in the Uinta Formation and cemented to the surface to protect possible but unknown resources of fresh water during deeper drilling operations. Natural gas and brackish water may be encountered in fluvial sandstone layers 5' to 15' in thickness below 1200' in the Uinta formation. Some non-porous layers in the upper members of the Green River Formation are composed of oil shale. Any porous layers that may be intersected in the Green River and Wasatch formations may contain oil, natural gas and brine water. The production (long string) casing is planned to be set to TD near 9000' in well-circulated drilling mud and cemented back to about 500' to overlap the surface casing string by at least 200'. In combination with the surface casing, the production casing will be fully isolated from the contents of all formations below the surface until perforations are made.

R649-3-4.2.6.3 The minimum pressure control equipment will be composed of a blow-out preventer with both blind and pipe rams rated for 3,000 psi working pressure (3M) that can be operated from a remote control station at least 50' from the well plus a rotating head above the blow-out preventer with a working pressure capacity of 500 psi. If the drilling contractor's blow-out prevention equipment or rented equipment includes an annular blow-out preventer, it will be included in the stack, but is not a requirement for this operation. The drilling spool or the surface casing head below the blow-out preventer will be equipped with a kill line and check valve and a flow line with a gauge, valve and backup valve or adjustable choke all of minimum 2" diameter and rated for no less than 3,000 psi working pressure. See **Thurston 12-31-7-21 Form 3 CDP Attachment B-BOPE Diagram.** Upon installation on the surface casing, the double-ram preventer will be pressure tested to 3,000 psi for ten minutes with no more than 5% pressure loss. The DOGM will be notified 24 hours in advance of all testing to be performed on the BOPE as required by R649-3-6.2.3. A record of the BOPE and casing tests will be maintained until the well is completed and that record of the BOPE and casing tests will be submitted to the DOGM if required per R649-3-7.3.

Before drilling through the surface casing shoe, the bit will be checked to verify the presence of an operable float valve. The Kelly cock will be checked and repaired if necessary. A stabbing valve suitable for use in the boxes of the drill pipe and the Kelly cock wrench will be kept handy at the driller's station. The surface casing will be pressure tested to 1050 psi (one psi/ft) for ten minutes with no more than 5% pressure loss.

In accordance with R649-3-7.4 the double ram blow-out preventer will be checked for physical operation each trip and all BOPE components with the exception of an annular type blow-out preventer, if present, will be tested monthly to 1050 psi for ten minutes with no more than 5% pressure loss. All tests will be noted in the driller's log and that log will be available for examination by the Director of DOGM or an authorized agent during routine inspections.

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R649-3-4.2.6.4 The well will be spudded with a bucket rig and the surface hole will be drilled with an Atlas-Copco RD20 or similar mobile rig. The primary rotary rig included with the drilling equipment may be of mobile or possibly modular design. The drilling rig and its auxiliary equipment and supplies are typically rigged up on a rectangular level pad measuring 210' by 345'. Pits are not allowed to be excavated at the well site under the terms of the U.S. Fish and Wildlife Service (FWS) Special Use Permit (SUP) dated April 24, 2015. Under additional terms of the FWS SUP, a closed-loop drilling system must be employed utilizing steel mud pits and all cuttings must be exported to an appropriately permitted disposal facility. Refer to **Thurston 12-31-7-21 Survey Packet (9-12-14) Sheet 5 Rig Layout.**

Three strings of casing are planned to be run to complete the construction of the well. Conductor pipe consisting of 80' of 16", 65.0 ppf, H-40 grade, 8 rd ST&C casing will be set in 22" diameter hole and cemented to the surface with 93 sacks (including 10% excess) of Class A cement mixed to yield 1.18 cubic ft/sack with 15.6 lbs/gallon slurry weight and total volume of 19.5 bbls. Surface casing consisting of 1050' of 8.625", 24.0 ppf, J-55 grade, 8 rd ST&C casing will be set in 12.25" diameter hole with a cement float shoe on bottom. The surface casing string will be cemented by pump and plug method from the float shoe to the surface with 417 sacks (including 50% excess) of Class G cement mixed with 4% gel, 2.8 lbs/sack Gilsonite and 0.25 lbs/sack cellophane flakes to yield 1.56 cubic ft/sack with 14.6 lbs/gallon slurry weight. A total of 115.9 bbls of slurry will be available to allow topping off the annulus if the cement sinks. The production casing or long string will be composed of 5.5", 17.0 ppf, J-55 grade, 8 rd LT&C casing that will be set in 7.875" diameter hole with a cement DV tool at 5000', a guide shoe on bottom near 9000' and a cement float collar one joint up near 8958'. The production casing string will be cemented by pump and plug method in two stages from the guide shoe to the DV tool at 5000' and approximately 200' over the surface casing shoe to near 850' with a total of 1371 sacks (including 20% excess over caliper volume) of 50/50 Premium Poz cement containing 0.6% Halad-322™, 2.0% Microbond M and 0.125 lbs/sack Pol-E-Flake to yield 1.24 cubic ft/sack with 14.35 lbs/gallon slurry weight and total volume of 302.8 bbls.

R649-3-4.2.6.5 Circulation while advancing the surface hole will be maintained with water. Circulation while advancing the long string hole will be maintained with gel/chem mud composed of bentonite, a polymer viscosity-builder and shale stabilizer and a pH modifier if necessary. No weighting material will be necessary. Sufficient supplies of the ingredients to mix mud and circulate the well will be on site when the surface casing shoe is drilled. The mud system will be monitored with gas chromatography gas detection equipment and by visually checking the steel mud pit level.

R649-3-4.2.6.6 The FWS SUP requires that soil within the area of the well pad be tested prior to rig-up by an independent lab to determine background levels of heavy metals, chemical pollutants and other contaminants and duplicated prior to completion or P&A work. No testing or coring during drilling operations is planned. Upon reaching TD and achieving circulation with conditioned mud, the well will be logged with tools to record gamma ray, neutron-density, caliper, spontaneous potential and resistivity data. All logs will be recorded from TD to the surface casing shoe and the gamma ray log will be recorded to the surface for correlation purposes.

R649-3-4.2.6.7 The expected bottomhole pressure will not exceed 3900 psi. The Ultra Resources, Inc. Three Rivers 36-11-720 oil well (API No. 43-047-51915) at a distance of 5825' to the northwest from the proposed well site intersected the same geologic section during 2012 without encountering pressure or temperature abnormalities or potential hazards such as hydrogen sulfide. No abnormal subsurface conditions or potential hazards are known to exist in the proposed well site.

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R649-3-4.2.6.8 The FWS SUP requires that 48 hours notice be given to FWS prior to initiation of well pad construction operations and that a paleontologist be present on site during such operations. FWS also requires that it be furnished a copy of the APD as approved by DOGM, be furnished a report on the depths to any groundwater encountered during drilling and that the applicant has a 120-day time window to drill and test this well and to make a determination to complete or abandon same.

The FWS SUP uniquely requires that if the well is to be completed as a producing well, it must utilize an off-site treatment, storage and export facility (centralized tank batteries) that will be located on property leased from SITLA in section 36, T7S, R20E, SLB&M. The design for the centralized facilities appears in the attachment entitled **Thurston Tank & Separator Site-20140912.**

R649-3-4.2.6.9 The requirements of this rule are not applicable to this vertical well.

R649-3-4.2.7 The Applicant was designated the operator of the lease (SITLA ML 52016) by the lessee, Thurston Energy, LLC by the attached Form 5 effective July 9, 2015.

R649-3-4.2.8 An Onsite Predrill Evaluation is not required under this rule prior to approval of an APD, but is required under the terms of the FWS SUP.

R649-3-4.3 This APD employed an electronic version of Form 3 provided by DOGM through its on-line ePermit system.

R649-3-5 The well will be identified by a sign posted in a conspicuous place near the well. The sign will be of durable construction with lettering kept in legible condition large enough to be read under normal conditions at a distance of 25'. The well numbering system utilized on the property will be a non-repetitive, logical and distinctive sequence. The sign will show the name of the well, the operator, emergency contact number, lease name and location by quarter section, township and range.

R649-3-6.1 Drilling operations will be conducted according to the drilling program approved under this APD by DOGM. Any changes except mitigation of emergency conditions will be submitted to DOGM on Form 9, Sundry Notices and Reports on Wells, for approval, and DOGM approval will be obtained prior to implementation. DOGM will be given verbal notice of emergency changes within 24 hours and the operator will file a written notice using Form 9 within five days.

R649-3-6.2 *Reporting Requirements.* Written notices and filing of forms with DOGM other than those that can be filed on-line will be directed to:

Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, UT 84114-5801

The telephone number of the DOGM receptionist during business hours and number to be used for leaving routine messages after business hours:

Utah DOGM: (801) 538-5340

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MAJOR UNDESIRABLE EVENTS must be reported by telephone immediately after calling for emergency services if needed. In the case of a major undesirable event ONLY, a notification to DOGM can be made after business hours by calling (801) 243-9466.

The Applicant as operator will comply with the following routine reporting requirements to DOGM:

1. The spudding of this well will be reported within 24 hours. This report will include the well name, drilling contractor, rig number and type, spud date and time, the date that continuous drilling will be commenced, the name of the reporter and the reporter's contact number. The spud report can be directed to Oil and Gas Well Information Specialist, Carol Daniels, verbally by calling (801) 538-5284 or transmitting the report via e-mail to Ms. Daniels at caroldaniels@utah.gov.
2. Within five working days of spudding the well, the operator will fill out and file Form 6, Entity Action Form, to receive the well's entity number for future operational reporting requirements.
3. Twenty-four hours advance notice of testing blow-out preventer equipment.
4. A monthly status report on the well will be filed until such time as the well is completed and the well completion report ("WCR") is filed. The monthly reports will be filed on Form 9 and include the well depth and a description of the operations conducted on the well during the month. The reports are due no later than the fifth day of the following calendar month.
5. Twenty-four hours advance notice of casing tests required prior to drilling through the casing shoe or continuing with completion operations.
6. Fresh water aquifer layers encountered during drilling will be reported on Form 7, Report of Water Encountered during Drilling with a copy to FWS. This report will be filed with Form 8, Well Completion Report or Recompletion Report and Log.

R649-3-14. Fire Hazards on the Surface. All rubbish or debris that might constitute a fire hazard shall be removed to a distance of at least 100' from the well location, tanks, separator, or any structure. All waste oil or gas shall be burned or disposed of in a manner to avert creation of a fire hazard.

Any gas other than poisonous gas escaping from the well during drilling operations will be conducted to a flare stack from the gas buster flow line where a continuous igniter will insure that the gas is burned. The flare stack must be located at least 100' from the well.

R649-3-15. Pollution and Surface Damage Control. The Applicant will take all reasonable precautions to avoid polluting lands, streams, reservoirs, natural drainage ways, and underground water.

The Applicant will carry on all operations and maintain the property at all times in a safe and workmanlike manner having due regard for the preservation and conservation of the property and for the health and safety of employees and people residing in close proximity to those operations.

At minimum, the Applicant will:

1. Take reasonable steps to prevent and will remove accumulations of oil or other materials deemed to be fire hazards from the vicinity of the well locations, lease tanks and pits;
2. Remove from the property or store in an orderly manner, all scrap or other materials not in use;
3. Provide secure, workmanlike storage for chemical containers, barrels, solvents, hydraulic fluid and other non-exempt materials;

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4. Maintain tanks in a workmanlike manner that will preclude leakage and provide for all applicable safety measures and construct berms of sufficient height and width to contain the quantity of the largest tank at the storage facility;
5. Insure that the use of storage tanks for crude oil or water without tops is limited to well testing operations;
6. Catch leaks and drips, contain spills and clean up promptly;
7. Practice waste reduction and recycling in order to help reduce disposal volumes;
8. Dispose of produced water, tank bottoms and other miscellaneous waste in a manner that is in compliance with DOGM Rules and other Utah State, Federal and county regulations or ordinances; and
9. Use good housekeeping practices in general and fully comply with the terms of the FWS SUP.

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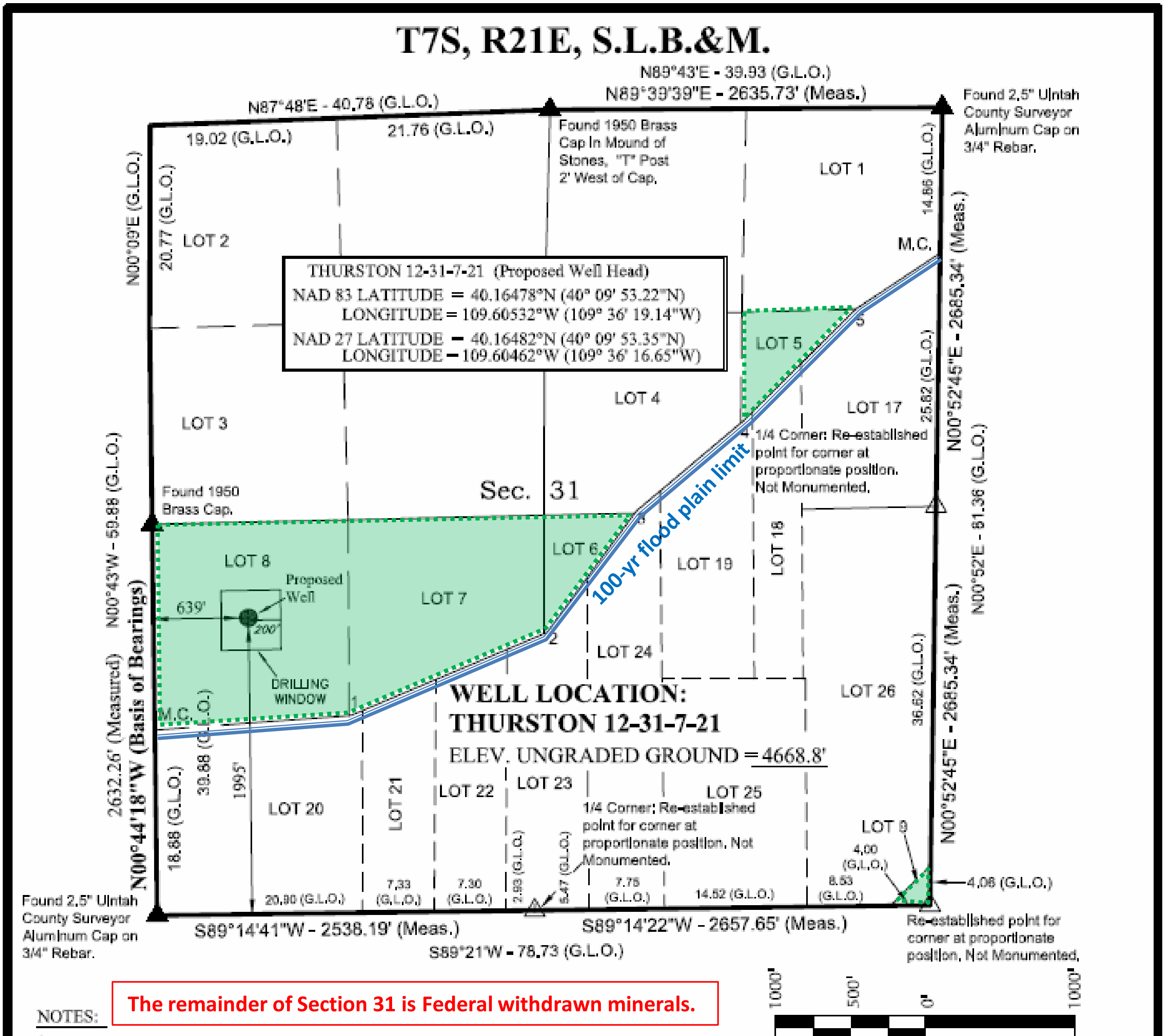
API Well Number: 43047554160000

Thurston 12-31-7-21 Form 3 CDP Attachment A-Lease Plat



NOTES:

The remainder of Section 31 is Federal withdrawn minerals.

▲ = Section Corners Located

1. Well footages are measured at right angles to the Section Lines.
2. Government Land Office (G.L.O.) distances are shown in feet or chains. 1 chain = 66 feet.
3. Bearings are based on Global Positioning Satellite observations.
4. BASIS OF ELEVATION: NAVD 88 DATUM USING THE UTAH REFERENCE NETWORK CONTROL SYSTEM

N

SURVEYOR'S CERTIFICATE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. 2-15-12

PROFESSIONAL LAND SURVEYOR No. 6028691 JOHN R. SLAUGH STATE OF UTAH

PROFESSIONAL LAND SURVEYOR
REGISTRATION No. 6028691
STATE OF UTAH

THURSTON ENERGY LLC

Utah SITLA ML 52016

*Distances measured perpendicular to the Lease Line

LEGAL PLAT	Distances from Proposed Well to Lease Lines	TIMBERLINE ENGINEERING & LAND SURVEYING, INC. (435) 789-1365 209 NORTH 300 WEST - VERNAL, UTAH 84078	
THURSTON 12-31-7-21 1995' FSL, 639' FWL LOT 8 OF SECTION 31, T7S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH.	N 644'; S 707'; W 639'; E 2080'	DATE SURVEYED: 12-22-11 / SURVEYED BY: D.J.S. DATE DRAWN: 01-10-12 / DRAWN BY: M.W.W. SCALE: 1" = 1000' / Date Last Revised: 02-14-12 M.W.W.	SHEET 2 OF 11

API Well Number: 43047554160000

PHOTO VIEW: FROM CORNER #1 TO LOCATION STAKE **CAMERA ANGLE: NORTHERLY**

PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD **CAMERA ANGLE: NORTH EASTERLY**

~~THURSTON ENERGY OPERATING COMPANY~~ DEL-RIO RESOURCES, INC.

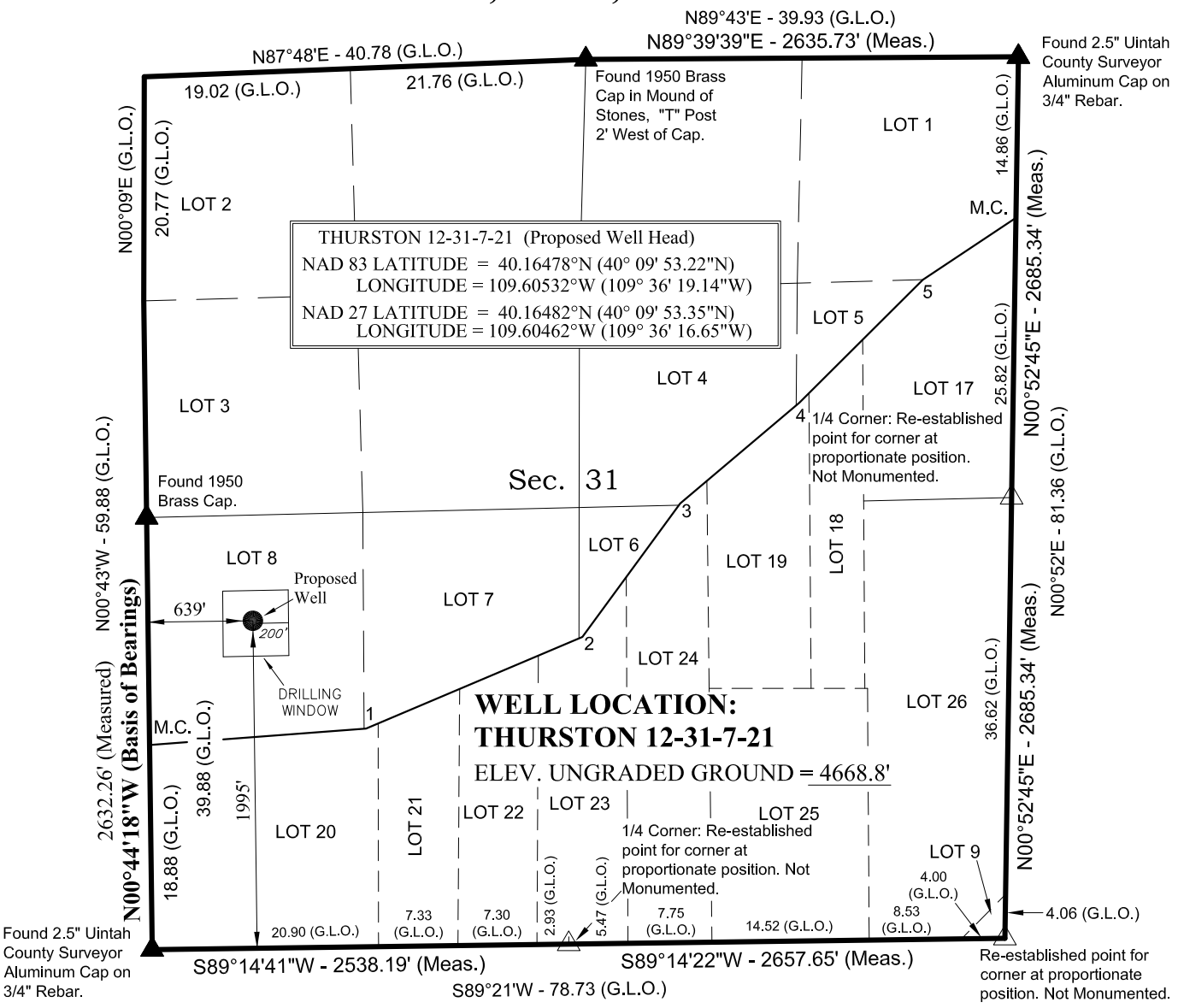
LOCATION PHOTOS

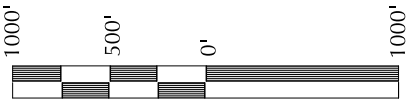
THURSTON 12-31-7-21
1995' FSL, 639' FWL
LOT 8 OF SECTION 31, T7S, R21E,
S.L.B.&M., UINTAH COUNTY, UTAH.

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE PHOTOS TAKEN: 12-22-11	PHOTOS TAKEN BY: D.J.S.	SHEET 1 OF 11
DATE DRAWN: 01-10-12	DRAWN BY: M.W.W.	
Date Last Revised: 02-14-12 M.W.W.		

T7S, R21E, S.L.B.&M.





SCALE

NOTES:

▲ = Section Corners Located

1. Well footages are measured at right angles to the Section Lines.
2. Government Land Office (G.L.O.) distances are shown in feet or chains. 1 chain = 66 feet.
3. Bearings are based on Global Positioning Satellite observations.
4. BASIS OF ELEVATION: NAVD 88 DATUM USING THE UTAH REFERENCE NETWORK CONTROL SYSTEM

N

*Distances measured perpendicular to the Lease Line

SURVEYOR'S CERTIFICATE

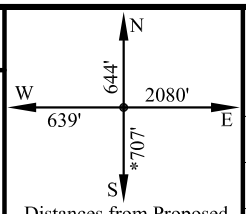
THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

PROFESSIONAL LAND SURVEYOR
REGISTRATION NO. 6028691
STATE OF UTAH

DEL-RIO RESOURCES, INC.
~~THURSTON ENERGY OPERATING COMPANY~~

LEGAL PLAT

THURSTON 12-31-7-21
1995' FSL, 639' FWL
LOT 8 OF SECTION 31, T7S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH.



Distances from Proposed Well to Lease Lines

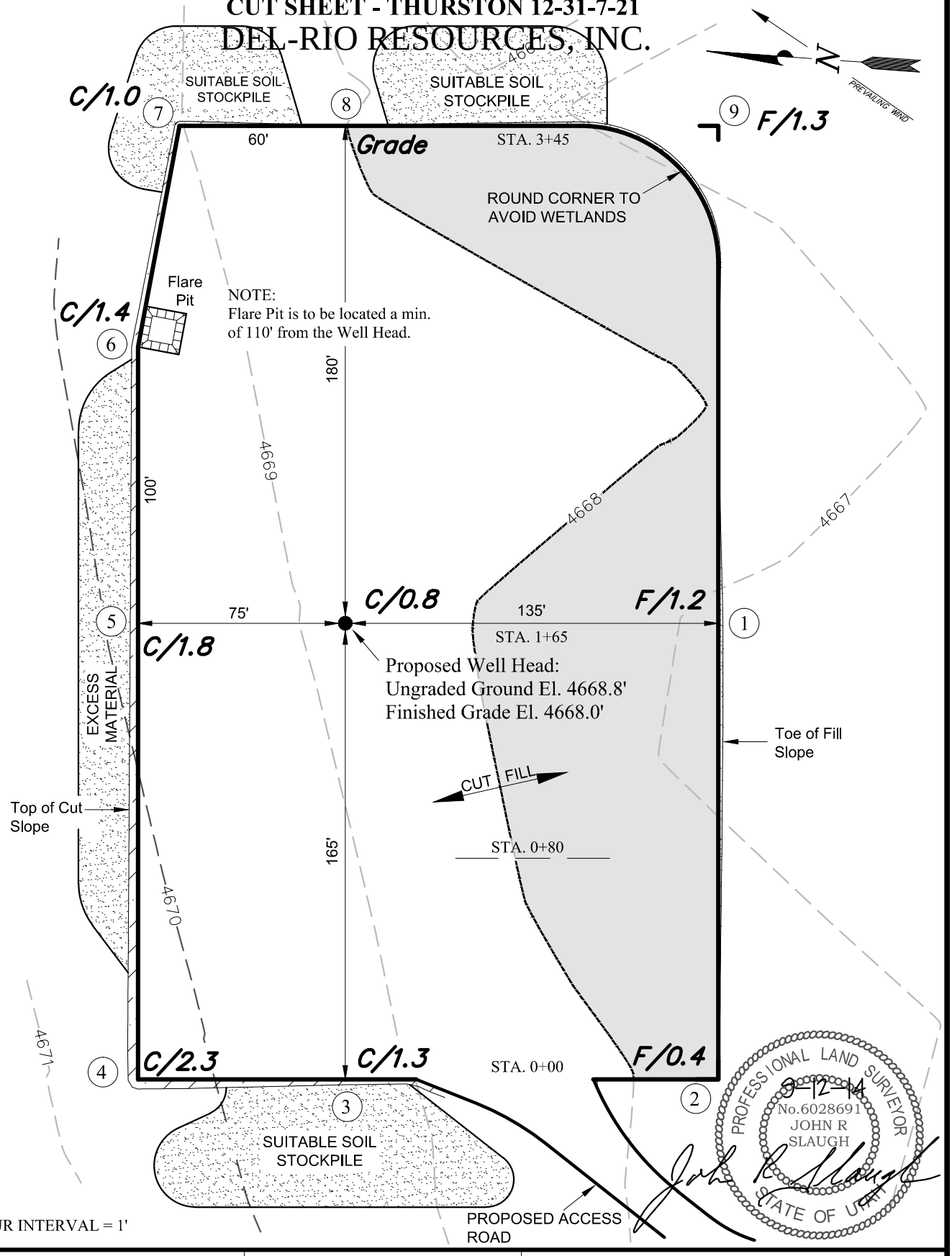
TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 12-22-11	SURVEYED BY: D.J.S.	SHEET 2 OF 11
DATE DRAWN: 01-10-12	DRAWN BY: M.W.W.	
SCALE: 1" = 1000'	Date Last Revised: 02-14-12 M.W.W.	

THURSTON ENERGY OPERATING COMPANY

CUT SHEET - THURSTON 12-31-7-21

DEL-RIO RESOURCES, INC.



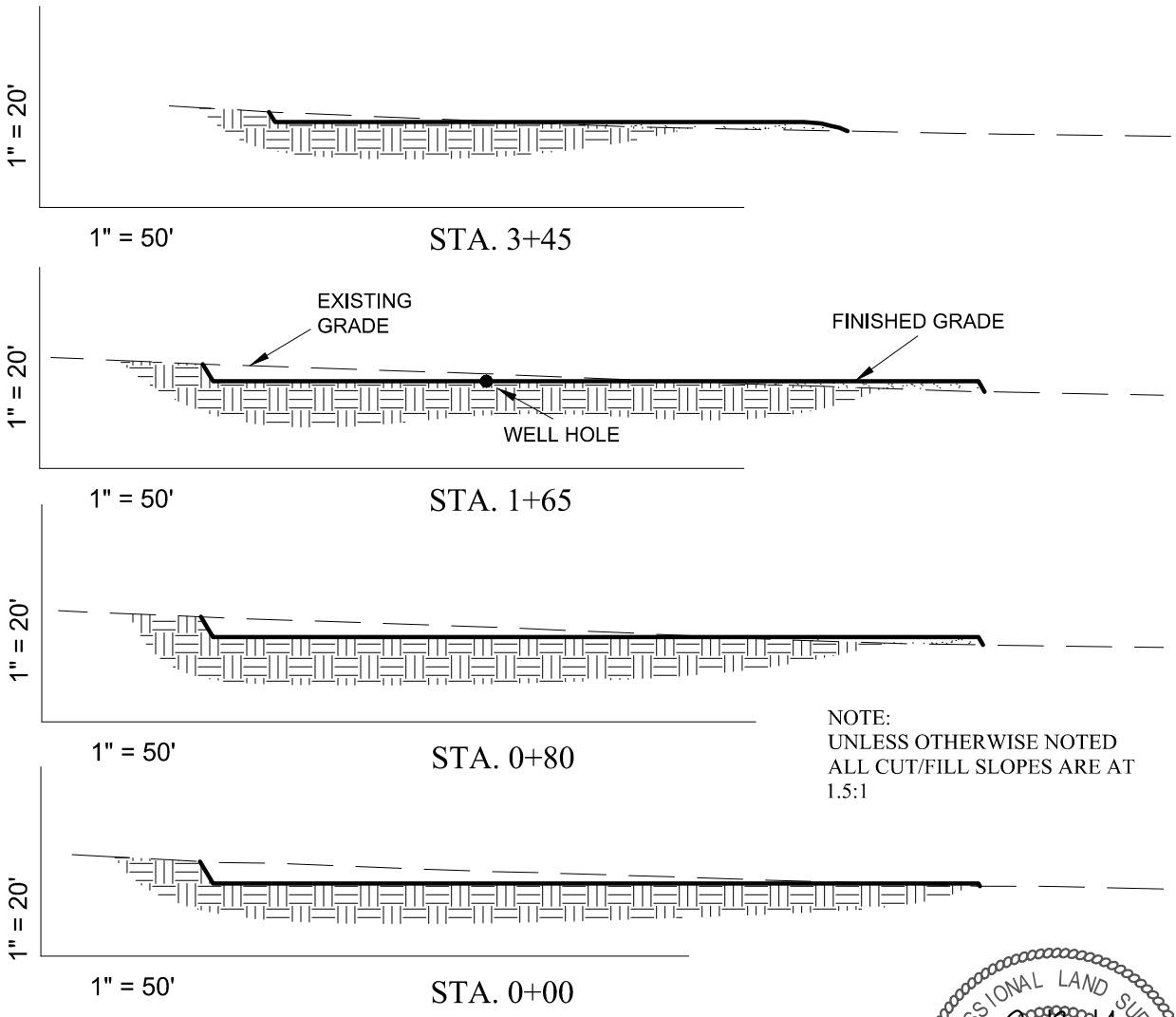
Section 31, T7S, R21E, S.L.B.&M.	Qtr/Qtr Location: LOT 8		Footage Location: 1995' FSL & 639' FWL	
Date Surveyed: 12-22-11	Date Drawn: 01-10-12	Date Last Revision: 9-4-14 M.W.W.	**TIMBERLINE** (435) 789-1365 **ENGINEERING & LAND SURVEYING, INC.** 209 NORTH 300 WEST - VERNAL, UTAH 84078	SHEET 3 OF 11
Surveyed By: D.J.S.	Drawn By: M.W.W.	Scale: 1" = 50'		

RECEIVED: July 17, 2015

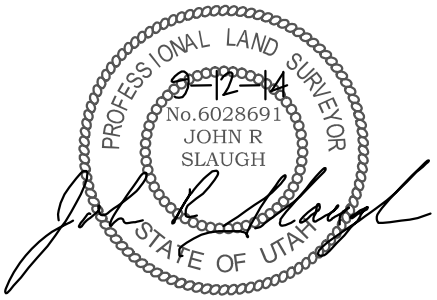
THURSTON ENERGY OPERATING COMPANY

CROSS SECTION - THURSTON 12-31-7-21

DEL-RIO RESOURCES, INC.



NOTE:
UNLESS OTHERWISE NOTED
ALL CUT/FILL SLOPES ARE AT
1.5:1



REFERENCE POINTS

185' SOUTHERLY = 4666.4'
235' SOUTHERLY = 4665.9'
215' WESTERLY = 4669.5'
265' WESTERLY = 4669.5'

ESTIMATED EARTHWORK QUANTITIES
(No shrink or swell adjustments have been used)
(Expressed in Cubic Yards)

CUT	Excess Material = 1,330
6" Topsoil Stripping = 1,330	Topsoil = 1,330
Remaining Location = 900	
TOTAL CUT = 2,230	
FILL = 900	Excess Unbalance = 0 (After Rehabilitation)

Section 31, T7S, R21E, S.L.B.&M.	Qtr/Qtr Location: LOT 8	Footage Location: 1995' FSL & 639' FWL
Date Surveyed: 12-22-11	Date Drawn: 01-10-12	Date Last Revision: 9-12-14 M.W.W.
Surveyed By: D.J.S.	Drawn By: M.W.W.	Scale: 1" = 50'

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

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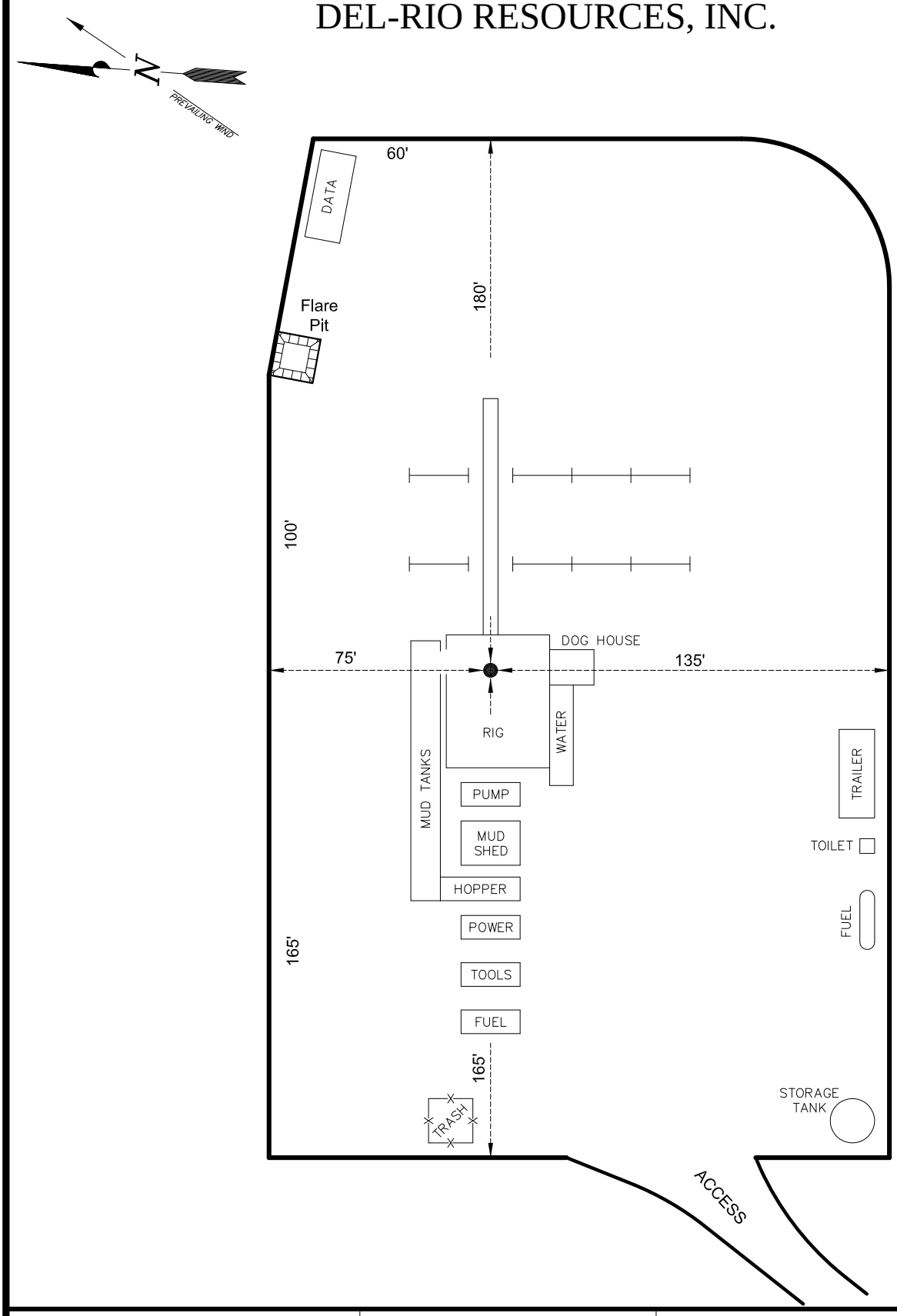
THURSTON ENERGY OPERATING COMPANY

RIG LAYOUT - THURSTON 12-31-7-21

DEL-RIO RESOURCES, INC.



Section 31, T7S, R21E, S.L.B.&M.	Qtr/Qtr Location: LOT 8	Footage Location: 1995' FSL & 639' FWL

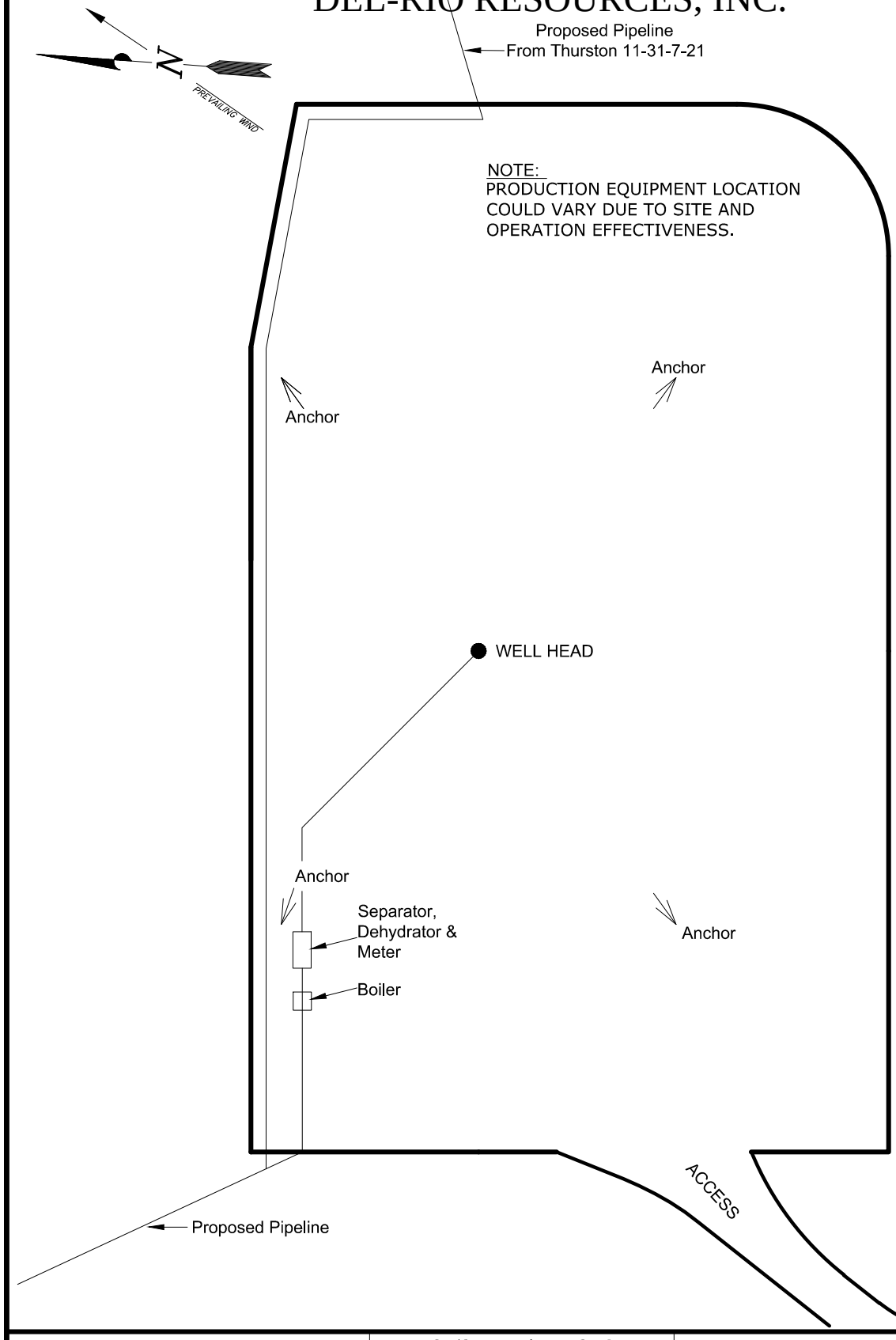
Date Surveyed: 12-22-11	Date Drawn: 01-10-12	Date Last Revision: 02-14-12 M.W.W.	**TIMBERLINE** (435) 789-1365 **ENGINEERING & LAND SURVEYING, INC.** 209 NORTH 300 WEST - VERNAL, UTAH 84078	SHEET 5 OF 11
Surveyed By: D.J.S.	Drawn By: M.W.W.	Scale: 1" = 50'		

RECEIVED: July 17, 2015

THURSTON ENERGY OPERATING COMPANY

PRODUCTION LAYOUT - THURSTON 12-31-7-21

DEL-RIO RESOURCES, INC.



Section 31, T7S, R21E, S.L.B.&M.	Qtr/Qtr Location: LOT 8	Footage Location: 1995' FSL & 639' FWL

Date Surveyed: 12-22-11	Date Drawn: 01-10-12	Date Last Revision: 9-4-14 M.W.W.	**TIMBERLINE** (435) 789-1365 **ENGINEERING & LAND SURVEYING, INC.** 209 NORTH 300 WEST - VERNAL, UTAH 84078	SHEET 6 OF 11
Surveyed By: D.J.S.	Drawn By: M.W.W.	Scale: 1" = 50'		

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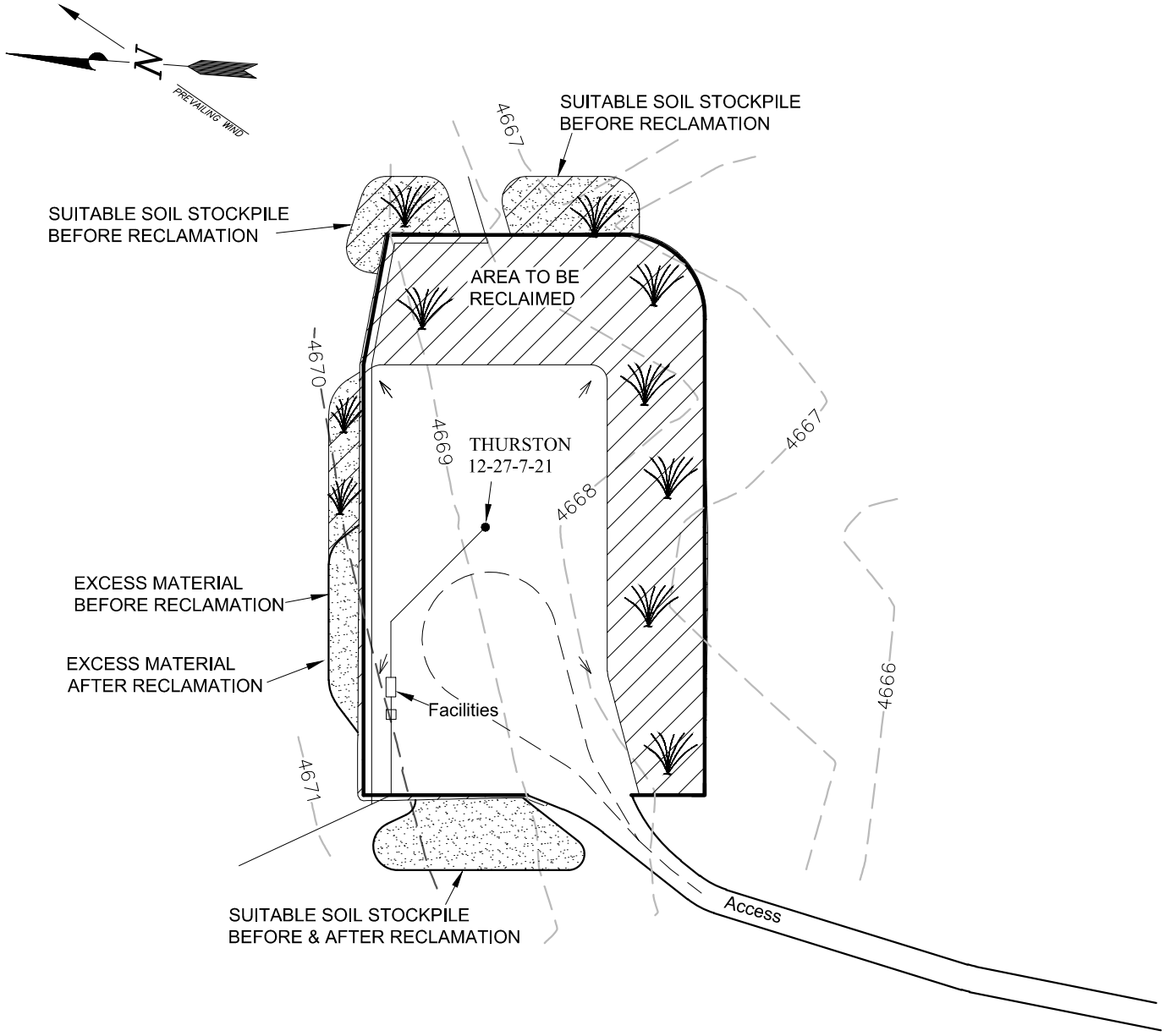
INTERIM RECLAMATION DIAGRAM - THURSTON 12-31-7-21

DEL-RIO RESOURCES, INC.



= Anchor

= Area to be Reclaimed and Vegetated

NOTE:

1. PRODUCTION EQUIPMENT LOCATION COULD VARY DUE TO SITE AND OPERATION EFFECTIVENESS.

2. TOTAL DISTURBED AREA: ±2.00 ACRES
   RECLAIMED AREA: ±0.89 ACRES
   UN-RECLAIMED AREA: ±1.11 ACRES

CONTOUR INTERVAL = 1'

100' 50' 0' 100'

SCALE

Section 31, T7S, R21E, S.L.B.&M.	Qtr/Qtr Location: LOT 8	Footage Location: 1995' FSL & 639' FWL

Date Surveyed: 12-22-11	Date Drawn: 01-10-12	Date Last Revision: 9-4-14 M.W.W.
Surveyed By: D.J.S.	Drawn By: M.W.W.	Scale: 1" = 100'

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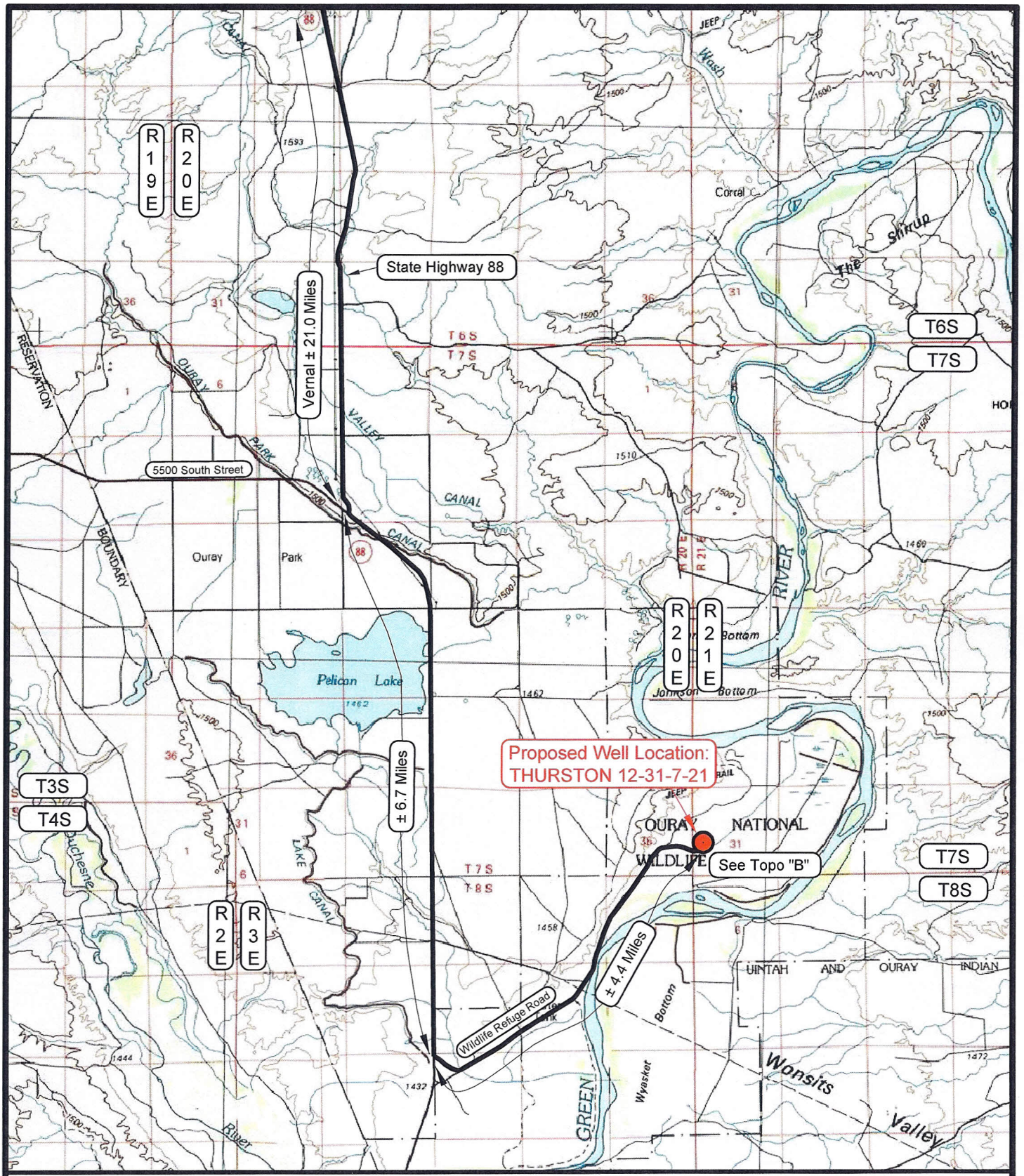
209 NORTH 300 WEST - VERNAL, UTAH 84078

SHEET 7 OF 11

RECEIVED: July 17, 2015

API Well Number: 43047554160000



LEGEND

PROPOSED ACCESS ROAD
= SUBJECT WELL
= OTHER WELLS
= EXISTING ROAD
= EXISTING ROAD (TO BE IMPROVED)

B-5460 = COUNTY ROAD CLASS & NUMBER

N

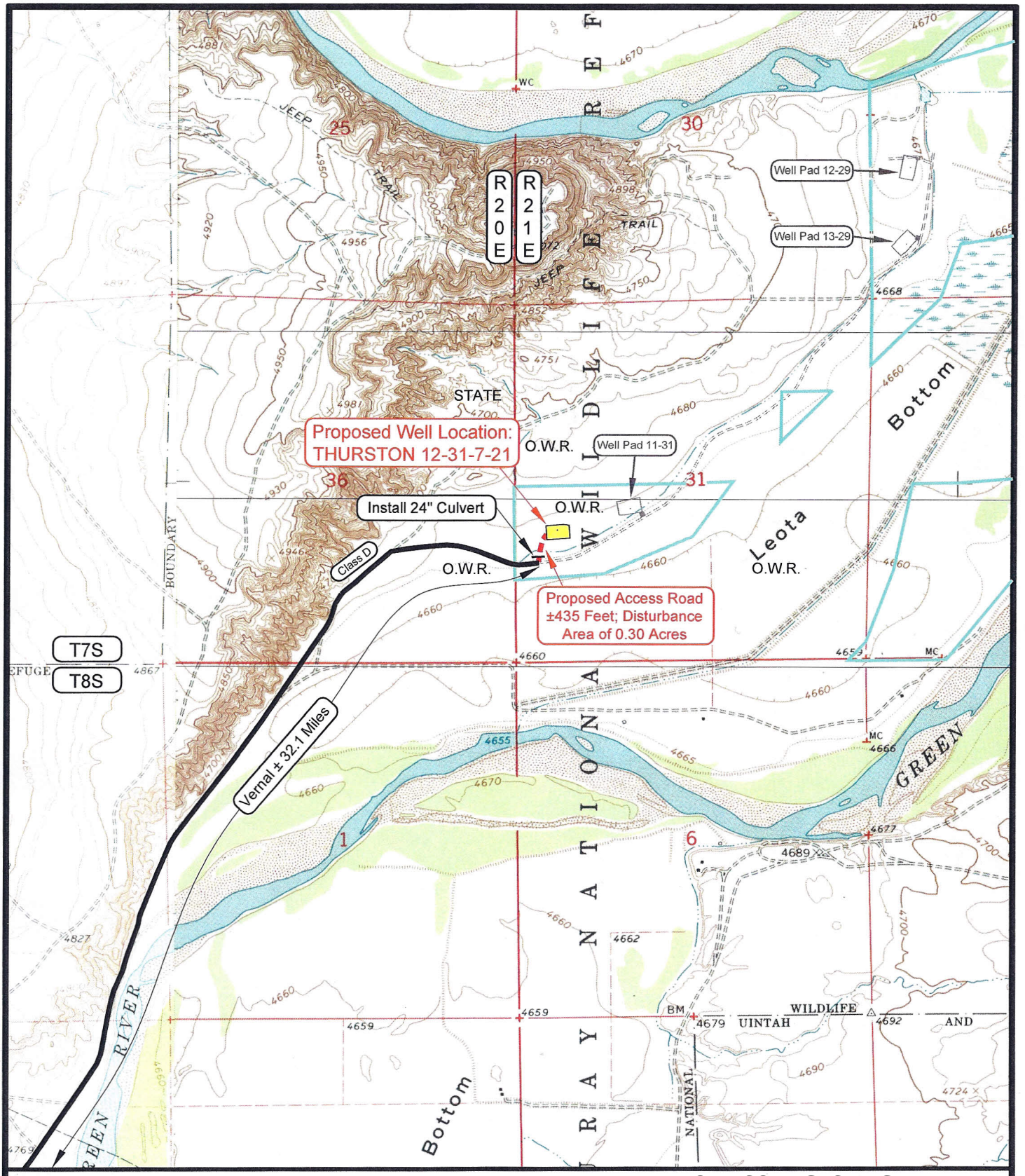
DEL-RIO RESOURCES, INC.
~~THURSTON ENERGY OPERATING COMPANY~~

THURSTON 12-31-7-21
SECTION 31, T7S, R21E, S.L.B.&M.
1995' FSL & 639' FWL

TOPOGRAPHIC MAP "A"		DATE SURVEYED: 12-22-11
		DATE DRAWN: 01-10-12
SCALE: 1:100,000	DRAWN BY: M.W.W.	REVISED: 02-14-12 M.W.W.

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

API Well Number: 43047554160000



LEGEND

PROPOSED ACCESS ROAD
= SUBJECT WELL
= OTHER WELLS
= EXISTING ROAD
= EXISTING ROAD (TO BE IMPROVED)
B-5460 = COUNTY ROAD CLASS & NUMBER
= LEASE LINE

DEL-RIO RESOURCES, INC.
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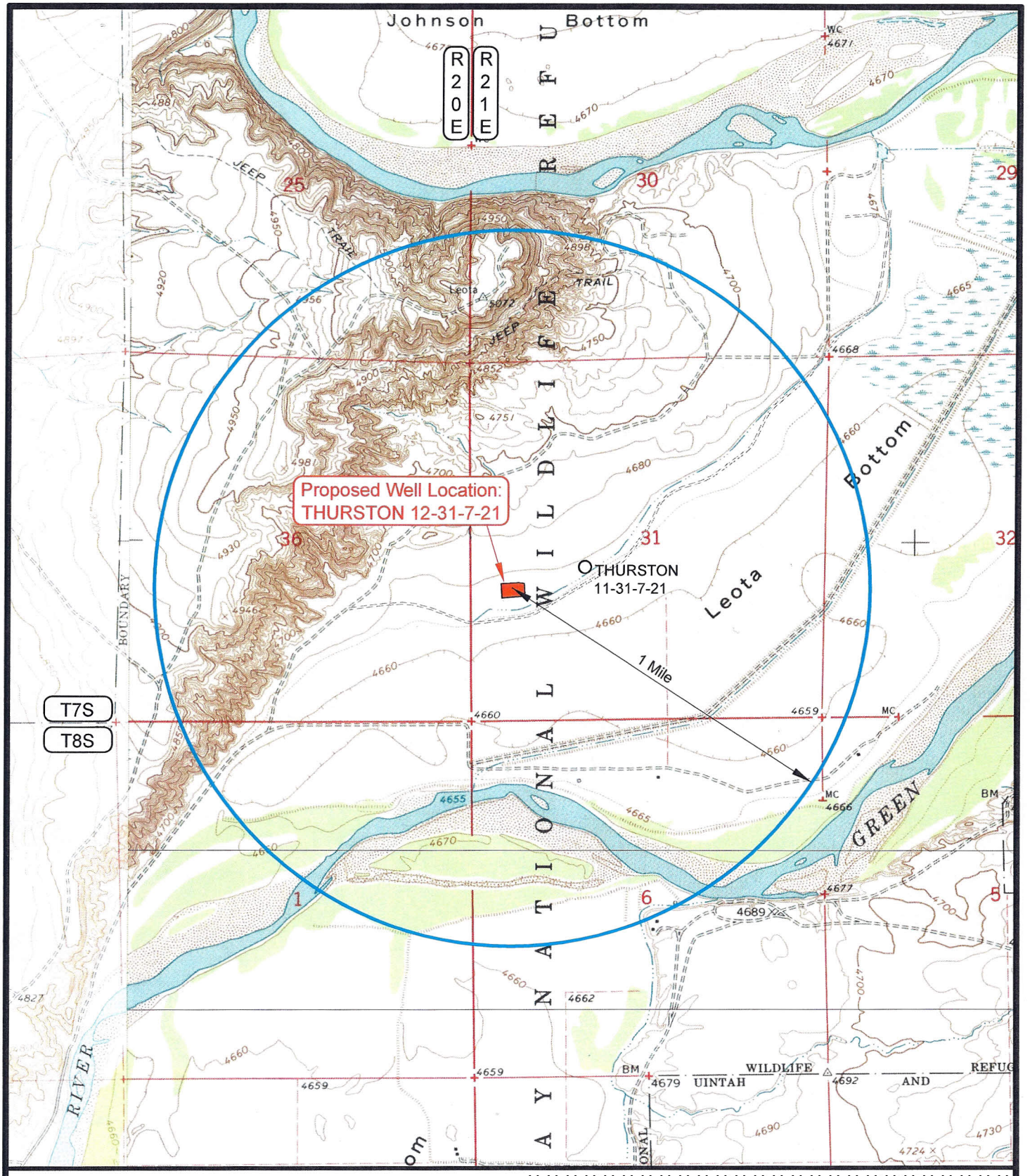
THURSTON 12-31-7-21
SECTION 31, T7S, R21E, S.L.B.&M.
1995' FSL & 639' FWL

TOPOGRAPHIC MAP "B"		DATE SURVEYED: 12-22-11
		DATE DRAWN: 01-10-12
SCALE: 1" = 2000'	DRAWN BY: M.W.W.	REVISED: 02-14-12 M.W.W.

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

API Well Number: 43047554160000



LEGEND

- ∅ = DISPOSAL WELL
- ● = PRODUCING WELL
- ● = SHUT IN WELL
- ○ = PROPOSED WELL
- ∅ = WATER WELL
- ● = ABANDONED WELL
- ● = TEMPORARILY ABANDONED WELL
- ⊕ = ABANDONED LOCATION

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DEL-RIO RESOURCES, INC.

THURSTON 12-31-7-21

SECTION 31, T7S, R21E, S.L.B.&M.

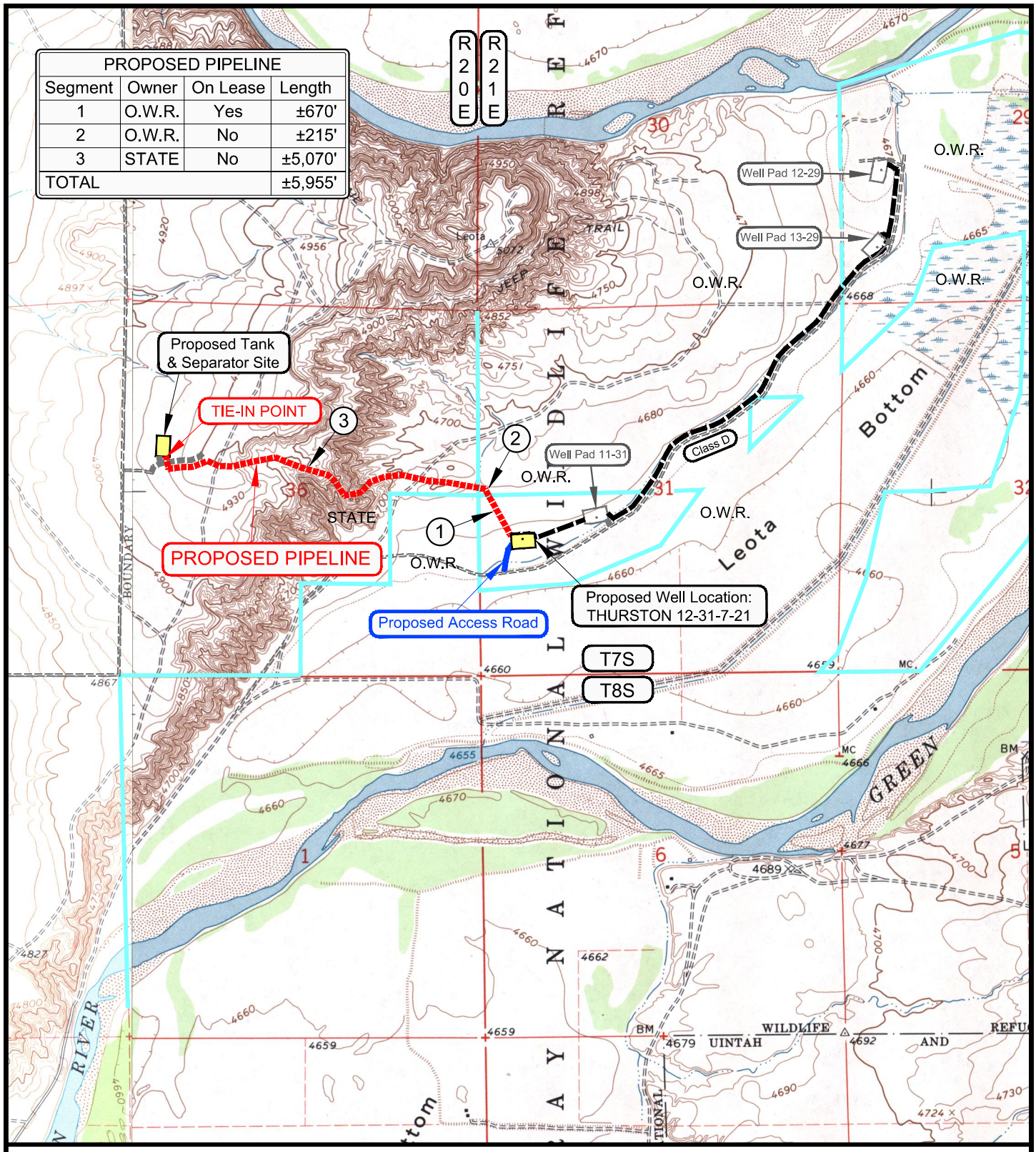
1995' FSL & 639' FWL

TOPOGRAPHIC MAP "C"	DATE SURVEYED: 12-22-11
	DATE DRAWN: 01-10-12
SCALE: 1" = 2000' / DRAWN BY: M.W.W.	REVISED: 02-14-12 M.W.W.

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

API Well Number: 43047554160000

PROPOSED PIPELINE			
Segment	Owner	On Lease	Length
1	O.W.R.	Yes	±670'
2	O.W.R.	No	±215'
3	STATE	No	±5,070'
TOTAL			±5,955'



Approximate Pipeline Length = ±5,955 Feet; Disturbance Area of 2.05 Acres

LEGEND

= PROPOSED PIPELINE
= OTHER PIPELINE
PROPOSED ACCESS ROAD
= SUBJECT WELL
= OTHER WELLS
= LEASE LINE AND / OR PROPERTY LINE
O.W.R. = OURAY WILDLIFE REFUGE

N

THURSTON ENERGY OPERATING COMPANY
DEL-RIO RESOURCES, INC.
THURSTON 12-31-7-21
SECTION 31, T7S, R21E, S.L.B.&M.
1995' FSL & 639' FWL

TOPOGRAPHIC MAP "D"	DATE SURVEYED: 12-22-11
SCALE: 1" = 2000' / DRAWN BY: M.W.W.	DATE DRAWN: 02-14-12 / REVISED: 9-2-14 M.W.W.

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

SHEET 11 OF 11

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DEL-RIO RESOURCES, INC.

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THURSTON 12-31-7-21

Section 31, T7S, R21E, S.L.B.&M.

Proceed in a westerly direction from Vernal, Utah along U.S. Highway 40 approximately 13.9 miles to the junction of State Highway 88. Exit left and proceed in a southerly direction along State Highway 88 approximately 7.1 miles to the intersection of 5500 South Street. Continue along State Highway 88 approximately 6.7 miles to the Wildlife Refuge Road (County D Road). Exit left and proceed in a southeasterly then northeasterly direction along the Wildlife Refuge Road (County D Road) approximately 4.4 miles to the proposed access road. Follow road flags in a northeasterly direction approximately 435 feet to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 32.2 miles in a southerly direction.

RECEIVED: July 17, 2015

API Well Number: 43047554160000

Ouray National Wildlife Refuge
Commercial Activities
Special Use Permit

(For Official Use Only)

Permit #: 65570-15-003

Permit Term: From: 4/22/2015 To: 4/22/2020

1) Permittee Name/Business: Christopher Buchanan Curton/Thurston Energy LLC

2) Permit Activity Type: Oil & gas exploration and development

3) Permit Status:
- ☑ Approved *If approved, provide special conditions (if any) in the text box below.*
- ☐ Denied *If denied, provide justification in the text box below.*

The U.S. Fish and Wildlife Service (Service) and Thurston Energy LLC have mutually developed and agreed to a set of conservation measures that are required special conditions of this Special Use Permit (SUP) (see 18 page attachment). Several sections of the SUP application received from Thurston Energy (dated 12/19/14) list "to be determined" (e.g., relating to subcontractors, licenses, permits, personnel, and vehicles). This information must be provided prior to the start of the project. This SUP is not effective until the necessary information is received by the Service. This SUP is effective for 5 years, until 4/22/2020. Prior to the 4/22/2020 expiration date, a Right-of-Way permit will have to be obtained from the Service's Realty Office for long-term access after the 5-year period. The Service and Thurston Energy will meet annually to discuss the project, implementation of the conservation measures, and any necessary modifications.

4) Are there additional special conditions attached to the permit? ◉ Yes ○ No ○ N/A

5) Have details on any Conviction(s) and/or Notice of Violation(s) been received? ○ Yes ○ No ◉ N/A

6) Are licenses/permits required, and have they been verified? ○ Yes ◉ No ○ N/A

7) Are Insurance and/or Certification(s) required, and have they been verified? ○ Yes ◉ No ○ N/A

8) Has a Minimum Requirements Decision Assessment been conducted? ○ Yes ○ No ◉ N/A

If yes, is assessment attached? ○ Yes ◉ No

9) Record of Payments: ○ Full ○ Partial ◉ Exempt

10) Is a surety bond or security deposit required? ○ Yes ◉ No ○ N/A

This permit is issued by the U.S. Fish and Wildlife Service and accepted by the applicant signed below, subject to the terms, covenants, obligations, and reservations, expressed or implied therein, and to the notice, conditions, and requirements included or attached. A copy of this permit should be kept on-hand so that it may be shown at any time to any refuge staff

11) Permit approved/issued by: (Signature and title) Sonja Johnson, Project Leader
Date: 4/22/15

12) Permit accepted by: (Signature of permittee)
Date: 4/29/15

API Well Number: 43047554160000

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 5

DESIGNATION OF AGENT OR OPERATOR

The undersigned is, on record, the holder of oil and gas lease

LEASE NAME: Utah State Lease

LEASE NUMBER: ML 52016

and hereby designates

NAME: Del-Rio Resources, Inc.

ADDRESS: P.O. Box 459

city Vernal state UT zip 84078

as his (check one) agent ☐ / operator ☑, with full authority to act in his behalf in complying with the terms of the lease and regulations applicable thereto and on whom the Division Director or Authorized Agent may serve written or oral instructions in securing compliance with the Oil and Gas Conservation General Rules and Procedural Rules of the Board of Oil, Gas and Mining of the State of Utah with respect to:

(Describe acreage to which this designation is applicable. Identify each oil and gas well by API number and name. Attach additional pages as needed.)

T7S, R21E, SLB&M, Uintah County, Utah
Section 29: Lots 5, 6, 7, 8, 10, 11, 12, 13, 14, N2SW, NWSE
Section 31: Lots 5, 6, 7, 8, 9
Section 32: Lots 1, 2, 3, 6, 7, 8, 9

Containing 619.08 acres, more or less.

APD's to be filed for the Thurston 11-31-7-21 and Thurston 12-31-7-21 wells

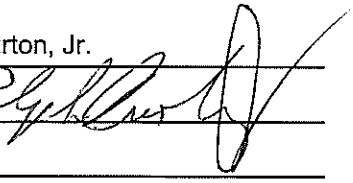
It is understood that this designation of agent/operator does not relieve the lessee of responsibility for compliance with the terms of the lease and the Oil and Gas Conservation General Rules and Procedural Rules of the Board of Oil, Gas and Mining of the State of Utah. It is also understood that this designation of agent or operator does not constitute an assignment of any interest in the lease.

In case of default on the part of the designated agent/operator, the lessee will make full and prompt compliance with all rules, lease terms or orders of the Board of Oil, Gas and Mining of the State of Utah or its authorized representative.

The lessee agrees to promptly notify the Division Director or Authorized Agent of any change in this designation.

Effective Date of Designation: 07/09/2015

BY: (Name) Ralph Curton, Jr.

(Signature) 

(Title) CEO

(Phone) (214) 704-3896

OF: (Company) Thurston Energy, LLC

(Address) 4925 Greenville Ave., Suite 800

city Dallas

state TX zip 75206

(5/2000)

2.1.10 Conservation Measures

Thurston would implement conservation measures to reduce the potential short-term, long-term, and cumulative impacts to existing resources as a result of implementation of the Proposed Action. Specific references to Federal and State laws are not intended to be all inclusive. Therefore, all applicable Federal and State laws (in addition to those highlighted) would still apply to the proposed exploration and production activities. These conservation measures would represent the Service's specific terms and conditions for the issuance of the Special Use Permit.

General

1) Thurston will secure all required permits and approvals from the Service, State of Utah, and Uintah County prior to construction. Thurston will adhere to all applicable Federal, State, and county regulations while performing all operations associated with the Proposed Action.

2) Thurston will annually monitor its facilities to ensure that normal operations will be in compliance with: its SUP; other rules and regulations that apply to the Proposed Action; the Thurston Reclamation and Weed Plan; commitments presented by Thurston (as contained in this EA); and any conditions that may result from approval of the Proposed Action.

3) Thurston and/or its contractors shall save, hold harmless, defend, and indemnify the United States, its agents and employees for loss, damages, or judgments and expenses on account of bodily injury, death, or property damage, or claims for bodily injury, death or property damage of any nature whatsoever, and by whomever made, arising out of the Operator, their employees, subcontractors, or agents with respect to the exploration of any and all mineral rights within the lands administered by the Refuge.

4) Proof of general liability insurance in an agreed upon amount (as required by State law) must be furnished to repair/mitigate any damages. This does not limit the liability for damages to this amount.

5) Construction operations will be conducted in consideration of the *Surface Operating Standards for Oil and Gas Exploration and Development, 4th Edition* (Gold Book) (USDI-USDA 2007 as revised). Thurston will maintain existing and new roads and well pads in conformance with "Gold Book" standards.

6) Thurston will implement hiring policies that would encourage the employment of area residents and will purchase equipment and materials from local area merchants to the extent feasible.

7) Thurston's drug and alcohol policies will be rigorously enforced.

8) Summaries of all the results generated from existing water quality data, cultural resource surveys, biological resource surveys, paleontological surveys, and any other sampling or monitoring must be provided to the Refuge Manager or the Service Authorized Officer

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(AO) prior to the onset of construction. The Service requests that Thurston provide information on the depths at which groundwater was encountered during drilling of the surface hole.

9) Impacts on sensitive habitat (e.g., wetlands, riparian areas), wildlife, plants, and other sensitive natural or historical resources must be avoided to the extent possible while constructing the access road and well pads. Existing roads shall be used to the greatest extent practicable to avoid erosion and minimize the footprint devoted to oil and gas operations. Roadbeds shall be engineered to avoid or minimize impacts to riparian areas or wetlands to the extent practicable. Unavoidable impacts shall be mitigated.

10) The Operator must provide detailed maps or plats of the proposed project layout (as required by the Refuge Manager or the Service AO) that shows routes, staging areas, construction areas, and work locations. The map should include the following minimum information:

11) Dimensions on adjacent exterior section lines sufficient to completely describe the quarter section that contains the proposed well shall be indicated. If dimensions are not field measured, state how the dimensions were determined.

12) The latitude and longitude of the proposed well location shall be provided on the drawing with a minimum of five decimal places of accuracy and precision using the North American Datum (NAD) of 1983 (e.g.; latitude 37.12345 N, longitude 104.45632 W).

13) For irregular, partial or truncated sections, dimensions will be furnished to completely describe the entire section containing the proposed well.

14) The field-measured distances from the nearer north/south and nearer east/west section lines shall be measured at 90 degrees from said section lines to the well location and referenced on the plat.

    a. A map legend.

    b. A north arrow.

    c. A scale expressed as an equivalent (e.g. - 1” = 1000’).

    d. A bar scale.

    e. The ground elevation.

    f. The basis of the elevation (how it was calculated or its source).

    g. The basis of bearing or interior angles used.

    h. Complete description of monuments and/or collateral evidence found; all aliquot corners used shall be described.

    i. The legal land description by section, township, range, principal meridian, baseline and county.

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j. Operator name.

k. Well name and well number.

l. Date of completion of scaled drawing.

m. A line designating the 100-year floodplain for the Green River relative to pad and well placement.

15) Refuge officials will conduct an onsite meeting before rig-up with representatives of the Operator, drilling contractor, subcontractors, suppliers, and service companies. The purpose of the meeting is to review and reiterate regulations and conditions that apply to planned activities and work crew conduct on the Refuge. Thurston will be responsible for ensuring that employees, representatives, consultants, contractors, and subconsultants adhere to the Conditions of Approval (COAs), conservation measures, and BMPs identified in the SUP and DR for this EA.

16) Service personnel will be subject to Thurston's safety procedures. Thurston shall provide any needed safety briefings for Refuge and Hatchery personnel prior to commencement of any operations at the site.

17) Prior to rig-up, Thurston must prepare an Emergency Preparedness Plan covering exploratory drilling, well control, materials, hauling, spill response, HAZMAT, and medical and fire evacuation. The plan must also identify the availability and capability of local and regional emergency services and must delineate strategies for addressing potential shortfalls or inadequacies contained in these resources. The Emergency Preparedness Plan must be provided to the Refuge Manager, the Ouray National Fish Hatchery Manager (and any other local governments and emergency response units required by Utah state law) and discussed in a pre-operation meeting to be held by Thurston. The plan must contain a telephone list naming key contacts for emergency operations and activation;

18) The Operator must upgrade and maintain all access routes, roads, and bridges designated for its use across the Refuge in accordance with acceptable specifications and standards as described by the "Gold Book" (USDI-USDA 2007 as revised). The Operator must have road maintenance equipment and operator(s) readily available to perform road repairs and maintenance as needed, or as directed by the Refuge Manager or Service AO.

19) General Refuge access conditions:

a. Thurston and/or its contractors shall be allowed access to portions of the Refuge for the purpose of carrying out drilling of oil and gas exploration wells previously identified (50 CFR 26.22).

b. The Refuge Manager is the coordinating official having immediate jurisdiction and administrative responsibility for surface use and access related to oil and gas operations on Refuge lands and property; all entry upon the Refuge must be coordinated with the Refuge Manager or the Service AO. The Refuge Manager

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must be advised at least 48 hours prior to initiation of construction (50 CFR 26.22).

c. Any necessary personnel, vehicles, materials, and/or equipment shall be transported to the project site before sunset each day, and shall not depart the project site until after sunrise, except for materials/equipment transport needed for emergencies (e.g., rig repairs, spill response).

d. The failure of the United States to require strict performance of the terms, conditions, covenants, agreements, or stipulations of this permit for access to conduct exploration activities on NWR lands shall not constitute a waiver or relinquishment of the right of the United States to strictly enforce thereafter such terms, conditions, covenants, agreements, or stipulations, which shall, at all times, continue in full force and effect.

e. Operator shall be responsible for the actions of all exploration, and production and support personnel. Violations of applicable laws or regulations will subject the Operator and/or their employees to prosecution under State and/or Federal laws. Individuals using the Refuge under the Operator's authorization are subject to inspections of vehicles and their contents by Federal and State law enforcement officers.

f. Operators will act in a manner that is respectful of Refuge habitats, wildlife, and property. Gates are to be locked or unlocked as they are found (50 CFR 27.21; 50 CFR 27.51).

g. If necessary, a lockbox or similar security system will be provided to Thurston for after-hours access to the project site during drilling and completion operations. No unauthorized entry of non-project related personnel will be permitted on the Refuge after normal operating hours.

h. All vehicle access will be restricted to developed roads. All-terrain vehicle (ATV) use and deviations to vehicle use must be pre-approved by the Refuge Manager in writing prior to any action taken (50 CFR 27.31).

i. Vehicle speed limits are not to exceed 10 miles per hour traveling on access roads from the main Refuge road to the well pad; and not to exceed 25 miles per hour on the main Refuge road during construction, drilling/completion, production, or normal daily activities to discourage the generation of fugitive dust. These speed limits are set at the discretion of Refuge Manager and limits will be strictly adhered to (50 CFR 27.31).

j. No pets will be allowed on the Refuge.

k. Person(s) entering or remaining on the Refuge when under the influence of alcohol is prohibited (50 CFR 27.81).

l. Possession of drugs or controlled substances is strictly prohibited on the Refuge (50 CFR 27.82).

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m. Possession, transportation, or discharge of firearms, fireworks, or explosives on the Refuge is prohibited unless specifically authorized (50 CFR 27.41; 50 CFR 27.42).

n. Open fires are strictly prohibited in any areas of the Refuge (50 CFR 27.95).

o. Operators will not be considered agents of the Service and will not represent the Service in any matters (50 CFR 27.84).

p. Operators will perform all work in accordance with the highest standards of the industry and to the satisfaction of the Service.

q. Operators will perform all work in accordance with all applicable laws and regulations and will obtain all necessary permits or licenses when required to do so. Thurston must complete or obtain all necessary permits, contacts and clearances prior to the start of the activity (50 CFR 25.13; 50 CFR 29.32).

r. Thurston will modify drilling operations, as necessary, to reduce conflicts with regular Refuge management and public use activities.

s. All personnel and activities shall be restricted to the immediate drilling area and the direct access road to the drill site (50 CFR 26.22).

t. Harming, harassing, and feeding wildlife species are prohibited. Molesting or destroying the home or dens of wildlife is prohibited. If dens are found during the normal course of operations, distinctive flagging will be used to alert all personnel of the den location. Adverse impacts on fish, wildlife, and the environment shall be kept to an absolute minimum. All road kills will be reported to the Refuge Manager or the Service AO (50 CFR 27.51).

u. Littering is prohibited. All cans, bottles, lunch papers, operations trash, and any other type of litter must be removed. Cigarette butts are considered litter. All vehicles must be equipped with a container to carry out trash (50 CFR 27.94).

v. No overnight quarters will be permitted on the Refuge unless authorized by the Refuge Manager (50 CFR 27.92).

20) A brief Worker Environmental Awareness Program (WEAP) will be implemented by Thurston for construction and drilling crews prior to the commencement of the project activities. Training materials and briefings will include, but not be limited to, discussion of the Federal and State ESAs, the consequences of noncompliance with these acts, identification and values of wildlife and natural plant communities, threatened and endangered species within the Project Area, hazardous substance spill prevention and containment measures, and review of all conservation measures.

Reclamation

1) Thurston has developed a Reclamation & Monitoring Plan/Noxious Weed Management Plan that will be used to direct reclamation and monitoring operations and to ensure that the results meet acceptable standards (included as Appendix F of the EA/BA).

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2) Thurston will develop vegetation pre-disturbance baseline documentation/data for the proposed well sites or will implement other methods to determine reclamation success, in cooperation with the Service AO.

3) Thurston will provide the Service with an annual report describing the progress of its reclamation operations.

4) Thurston will reclaim as much of a well pad as possible by leaving level ground sufficient for work over operations and re-contouring the remainder of the initial disturbance;

5) All construction of roads and pads will occur in a manner that best facilitates their subsequent complete removal and reclamation once Thurston's activities have ceased at these sites. This includes separating, stockpiling, and covering topsoil layers onsite to be replaced during reclamation. All disturbed areas must be reclaimed with Service input at the time reclamation occurs. Only endemic plants and seed mixtures are to be used in reclamation. Thurston shall separate and store the topsoil horizon or the top 6 inches, whichever is deeper, and mark or document stockpile locations to facilitate subsequent reclamation. When separating the topsoil layers, the operator shall segregate the horizon based upon noted changes in physical characteristics such as organic content, color, texture, density, or consistency. All stockpiled soils shall be protected from degradation due to contamination, compaction and, to the extent practicable, from wind and water erosion during drilling and production operations. BMPs to prevent weed establishment and to maintain soil microbial activity shall be implemented. Final reclamation of all disturbed areas shall be considered complete as follows:

    a. When all activities disturbing the ground have been completed and;

    b. When all disturbed areas have been either built upon, compacted, covered, revegetated, paved, or otherwise stabilized in such a way as to minimize erosion, or;

    c. When a uniform vegetative cover has been established that reflects pre-disturbance or;

    d. When reference area forbs, shrubs, and grasses with total percent plant cover of at least 80 percent of pre-disturbance or reference area levels (excluding noxious weeds) or equivalent permanent, physical erosion reduction methods have been employed. Re-seeding alone is not sufficient.

6) Within 120 days following completion of drilling and testing operations, the Refuge Manager or the Service AO will be advised whether the well is to be retained or plugged. If the well site is to be abandoned, the well is to be plugged to meet the standards of the State requirements, All above-ground structures must be removed, and the site and road restored to near original condition as directed by the Refuge Manager or the Service AO. Any damage to existing surface vegetation, water channels, or other physical features must be restored to original site conditions. All costs shall be borne by the Operator.

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Erosion and Sedimentation Control

1) The drill site and immediate access roads must be constructed of Refuge-approved material for all drilling locations. All existing drainage patterns within roads to be constructed must be maintained uninterrupted by the use of culverts, bridges, or other applicable techniques as specified and authorized by the Refuge Manager or the Service AO.

2) Thurston must provide a Stormwater Pollution Prevention Plan (SWPPP) that would be reviewed by the Service prior to the commencement of construction activities. This plan should be prepared according to industry guidelines and should include sufficient information and narrative descriptions regarding construction activities along the existing waterways, locations of all proposed potential discharges, identification of potential pollutant sources, maps detailing all ground-disturbing activities at sites, and details and figures for proposed BMPs for these construction activities.

3) Thurston shall implement and maintain BMPs at all oil and gas locations to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, and site degradation. BMPs shall be maintained until the facility is abandoned and final reclamation is achieved. Operators shall employ BMPs, as necessary, to comply with this rule at all oil and gas locations, including, but not limited to, well pads, soil stockpiles, access roads, tank batteries, and pipeline ROWs. BMPs shall be selected based on site-specific conditions, such as slope, vegetation cover, and proximity to water bodies, and may include maintaining in-place some or all of the BMPs installed during the construction phase of the facility. Where applicable, based on site-specific conditions, operators shall implement BMPs in accordance with good engineering practices.

4) Stormwater drainage should be segregated from loading/unloading facilities, and operations areas from unimpacted areas;

5) No project vehicles will be operated along dirt access roads or at drilling pad sites during periods of saturated soil conditions when surface ruts greater than 4 inches would occur along straight travel routes;

6) As necessary during construction, drilling, and production operations, appropriate BMP sedimentation controls will be used in areas susceptible to erosion. The BMPs would be selected and constructed as described in “The Gold Book” (USDI - USDA 2007);

7) Sediment traps, swales, and mulching should be used during construction activities to reduce loss of sediment and contamination of runoff;

8) Straw bales and/or silt fences would be used as energy dissipaters where the possibility of erosional down-cutting exists. If straw bales are used for erosion and sediment control, the straw/hay must be certified weed-free; otherwise, only silt fencing would be allowed for this purpose. These structures would be installed prior to construction, and would be left in place and maintained for the LOP or until the adjacent disturbed slopes have revegetated and stabilized;

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9) Project vehicles will be restricted to use of the project-related travel routes and surfaces, including turn-outs on approved travel routes; and

10) Thurston would perform re-grading and watering of the access routes following inclement weather conditions as needed.

Spill Procedures

1) In accordance with EPA regulations (40 CFR Part 112) and UDOGM requirements, Thurston must prepare and implement a SPCC plan for each well within 6 months of beginning operations. Copies of the SPCC plans shall be provided to the Refuge Manager within 6 months of commencing production operations.

2) A Draft SPCC Plan, which illustrates the types of spill prevention measures that will be developed and implemented for each well, is included in **Appendix G** of the EA/BA. This plan will be reviewed by the Service and should include a listing of secondary containment and/or diversionary structures or equipment for all oil handling containers, equipment, and transfer areas. It should also include a table identifying tanks and containers at the facility with the potential for an oil discharge, the mode of potential failure, and the likely flow direction and potential quantity of the discharge, as well as provide the secondary containment method and containment capacity. In addition, the SPCC Plan should include the physical layout of the facility and a facility diagram that marks the location and contents of each container. The facility diagram must also include all transfer stations and connecting pipes.

3) All open-top oil, condensate, or produced water tanks, dehydration unit tubs, secondary containment tubs, and any other open tub, tank, pan, or similar item will be netted or screened to prevent entrapment and mortality of migratory birds. Where there are open-top tanks that do not contain harmful substance, such as stock water tire tanks, we recommend the use of escape ramps in these tanks to minimize the potential drowning of migratory birds and possible violations of the Migratory Bird Treaty Act (MBTA).

4) Thurston will construct a secondary containment berm of sufficient capacity to contain 110 percent of the storage capacity of the largest tank in the tank battery and sufficient freeboard to contain precipitation. Thurston will install containment for the chemical injection tanks.

5) Catch pans or other secondary containment systems consistent with industry standards are required for equipment and locations such as mud pumps, bulk mud additive tanks, fuel tanks, mixing sheds, generators, accumulator and lines, and under the entire rig floor. The catch pans must cover the entire surface area under the equipment. The rig floor catch pan (collector) must be properly secured to allow for wash down and mud drainage from the drill pipe. The catch pans must be kept free of accumulated debris and spill materials must be emptied on a regular basis.

6) Earthen berms and storage tank containment areas would be lined with a non-permeable liner in order to reduce the risk of groundwater and soil contamination. These liners will be maintained and replaced per manufacturer guidelines.

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7) Substitute organic additives, polymers, or biodegradable additives for oil-based mud to reduce toxicity;

8) Lubricate with mineral oil and lubra-beads instead of diesel oil;

9) All on-site personnel would be trained in the proper management of waste types encountered at the site;

10) A copy of all MSDS sheets shall be provided prior to use of any chemicals or compounds that have an MSDS data sheet;

11) Thurston shall provide Refuge staff with any needed safety equipment for periodic inspection;

12) Fuel and lubricants will be temporarily stored in transportable containment trucks and trailers to minimize potential for accidental releases;

13) No other hazardous or potentially hazardous materials will be brought into the Project Area;

14) During daily site visits, visual inspections will be conducted to assure that no leaks of oil, brine, or chemicals are occurring.

15) All spills or leaks of drilling muds, diesel fuel, hydraulic fluid, lubricating oil, and coolant, including contaminated soil material will be excavated and placed in an appropriate container and then transported to an approved off-site disposal location; and

16) The soils at the location site must be tested by a USFWS-approved laboratory using approved standards to determine levels of heavy metals, chemical pollutant, and other contaminants prior to rig-up operations. Duplicate tests must be conducted before completion or at abandonment to determine impacts from potential undiscovered spills and releases of oil or other chemical constituents. If the exit test reveals levels above the background established by the pre-drilling test, clean-up will be required. The most practical method of clean-up is soil removal. Any quantity of soil removed must be replaced with a Service-approved equal and to the original contours.

Human Health and Safety

1) Trash containers and a portable toilet will be located on site during construction. Upon completion of drilling operations, Tri-County Health Department would permit sewage system disposal at an off-Refuge location;

2) Accumulated trash and nonflammable waste materials will be hauled to an appropriate receiving landfill;

3) All debris and waste materials not contained in the trash containers and surrounding area would be cleaned up, removed from the well pads and access road corridors, and disposed of at the landfill;

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4) No potentially harmful materials or substances would be left on the well pads, access road corridors, or the vicinity. Scrap metal and other recyclable refuse would be hauled to an approved recycling facility;

5) Project-related vehicle traffic would be limited to Service-approved access routes;

6) Thurston and subcontractor crew members would minimize daily personal vehicular traffic in and out of the Project Area by carpooling from surrounding towns;

7) A sign warning the public of project-related activity would be located at the closest road or travel route intersection on either side of the proposed drill-sites; and

8) Fencing and appropriate signage would be installed on all well pads if needed to prevent Refuge visitors from gaining access

Fire Hazards

1) To protect and minimize the possibility of fires during the construction phase, all project vehicles and construction equipment, including welding trucks, would be equipped with fire extinguishers and shovels;

2) Brush or vegetation located within 15 feet of mufflers, radiators, headers, and other engine parts would be avoided, and periodic checks would be conducted to prevent this build-up;

3) Smoking would only be allowed in company vehicles and/or designated smoking areas; all cigarette butts would be placed in appropriate containers;

4) Cooking fires, campfires, or fires of any kind are not allowed. Portable generators used in the Project Area would be required to have spark arresters;

5) Thurston would coordinate project activities with appropriate Service and/or County fire-fighting personnel when operating within the Project Area;

6) Thurston contractors would have a site-specific Health and Safety Plan that includes fire protection.

Air Quality

1) All internal combustion equipment would be kept in good working order;

2) To reduce potential impacts to air quality, all equipment associated with drilling and completion activities, as well as service equipment used for fracking and cementing, would be with Tier II or better drilling rig engines.

3) To reduce any potential impact on air quality, the Service requires that all vehicles with diesel engines be manufactured after 1996 and be kept in good working order;

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4) Low bleed or no bleed pneumatics would be installed on separator pump valves and other controllers. The use of low bleed pneumatics would result in lower emission of volatile organic compounds (VOCs);

5) Thurston has agreed to use similar air pollution control technologies that are currently being applied for other oil and gas operations on Federal lands in the Uinta Basin. At a minimum, the following air pollution control practices will be used to address recognized issues with winter ozone formation:

    a. Dehydrator VOC emission controls to +95% efficiency;

    b. Tank VOC emission controls to +95% efficiency; and

    c. If and when gas-powered engines are used, they will be required to meet the following standard: Stationary internal combustion engine standard of 2g NOx/bhp-hr for engines <300HP and 1g NOx/bhp-hr for engines >300HP.

6) During completion, flaring would be limited as much as possible. Production equipment and gas gathering pipelines would be installed as soon as possible;

7) Telemetry would be installed to remotely monitor and control production. This would reduce truck traffic and decrease associated dust and tailpipe emissions;

8) During production, tighten connections and replace packing to minimize leaks and fugitive emissions;

9) During production, use and maintain proper hatches, seals, and valves to minimize air emissions;

10) During daily site visits, or as needed, inspections will be conducted using soap solutions to identify and repair fugitive gas leaks from leaking compressors, valves, connectors, seals, and open-ended lines;

11) Eliminate unnecessary vehicle idling;

12) Thurston would prohibit any open burning of garbage or refuse at well sites or other facilities.

Noxious and Invasive Weeds

1) All vehicles and equipment originating from outside the Refuge must be decontaminated prior to arriving at the Refuge per Service procedures to prevent the introduction of noxious weeds to the Refuge. Decontamination would include removal of skid plates for inspection and cleaning if necessary. It is recommended that the operator consult with the local weed control agency or other weed control authority if weed infestation occurs. It is the responsibility of the operator to monitor affected and reclaimed lands for noxious weed infestations. The Refuge will require a weed control plan.

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2) Any materials brought into the Refuge as fill material for construction must be certified weed-free or authorized by the Refuge Manager or the Service AO. To minimize the spread of invasive species, no top soils will be brought in from outside the Refuge.

3) To reduce the likelihood of introducing noxious and invasive weed species as a result of project-related vehicles and equipment entering the Project Area, Thurston and its contractors will remove weed seed and soil from all construction equipment and vehicles prior to the start of construction;

4) Any weed infestations noted at drilling sites and along project-constructed access roads would be treated as necessary and as approved by the Service to prevent additional spread; and

5) Thurston would implement an intensive weed control program at the beginning of the first growing season after construction in accordance with the site-specific reclamation and weed management plan.

Wildlife

1) Project personnel would be subject to the following requirements: (1) no harming, harassing, or shooting of wildlife or horses, (2) no dogs or other pets admissible in the Project Area, (3) no firearms permitted, and (4) no littering. Workers will be required to check under their vehicles prior to departing the project site;

2) Thurston will conduct preconstruction surveys, as needed.

3) Thurston will install electricity (if feasible) to provide power for separators and pumpjacks on the two proposed well pads to reduce the level of noise for both wildlife and visitors. Should electrified systems be used, an aboveground distribution line would be built on single wood utility poles located within the proposed road ROW. If feasible, the proposed distribution line would tie into an existing power source at the Ouray National Fish Hatchery (NFH). If and when gas-powered engines are used, noise abatement methods (e.g., acoustic barriers and mufflers) will be implemented to reduce noise impacts to levels at or below noise levels of an electrified system. Thurston will communicate its intentions for power supply and noise mitigation methods to the Service as determinations are made.

4) Construction and drilling operations conducted during the Refuge's sensitive wildlife period (May 1st through August 31st) must be coordinated with and authorized by the Refuge Manager or the Service AO to avoid conflicts with wildlife. At the discretion of the Refuge Manager or the Service AO, additional wildlife monitoring or mitigation may be required during this sensitive period based on site-specific conditions.

5) Should the project schedule construction activities between March 1st and August 31st, all areas within 0.5 miles of the proposed project would be surveyed for the presence of raptor nests by a Service-approved biologist. If occupied raptor nests are found within the recommended spatial buffers, the Utah ESO would be consulted to determine if the recommended spatial buffers can be modified on a nest-by-nest basis by considering the species, timing, nest status, disturbance type and duration, vegetation, and topography.

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6) Burrowing owl surveys would be conducted concurrently with the raptor surveys within 0.25 miles of the proposed project if the project schedule occurs between March 1st and August 31st. If occupied burrowing owl nests are found within the recommended spatial buffers, the Utah ESO would be consulted to determine if the recommended spatial buffers can be modified on a nest-by-nest basis by considering the species, timing, nest status, disturbance type and duration, vegetation, and topography.

7) Project activities would comply with applicable requirements of the MBTA, Bald and Golden Eagle Protection Act (BGEPA), and ESA, as amended;

8) Potential impacts to raptors from increased risk of electrocution would be mitigated by designing poles for the new power lines according to criteria presented in *Suggested Practices for Raptor Protection on Powerlines: the State of the Art in 2006* (APLIC 2006). In addition, strategies for minimizing collision risk with power lines would follow criteria presented in *Reducing Avian Collisions with Powerlines: the State of the Art in 2012* (APLIC 2012). Depending on the alternative selected, specific standards to be followed will be identified in the Decision Record for the EA.

9) To avoid and minimize impacts to birds during construction and operations and to ensure ground-disturbing activities do not result in the "take" of an active nest or migratory bird protected under the MBTA, the Service requires the following of Thurston:

    a. Any groundbreaking activities or vegetation treatments should be performed before migratory birds begin nesting or after all young have fledged to avoid take;

    b. Time tree and shrub removal and ground disturbing activities should occur during the non-nesting season (approximately September 1st to February 28th). If this is not possible, surveys should be conducted prior to disturbance to determine whether active nests are present; active nests found in the area should be left untouched until the young have fledged;

    c. If activities must be scheduled to start during the migratory bird breeding season, appropriate steps to prevent migratory birds from establishing nests in the potential impact area should be taken. These steps could include covering equipment and structures and use of various excluders (e.g., noise). Birds can be harassed to prevent them from nesting on the site;

    d. If activities must be scheduled during the migratory bird breeding season, a site-specific survey for nesting birds should be performed starting at least 2 weeks prior to vegetation treatments. Established nests with eggs or young cannot be moved, and the birds cannot be harassed (see item b above), until all young have fledged and are capable of leaving the nest site; and

    e. If nesting birds are found during the survey, appropriate spatial buffers should be established around nests. Vegetation treatments within the buffer areas should be postponed until the birds have left the nest. Confirmation that all young have fledged should be made by a qualified biologist.

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10) The Refuge Manager or the Service AO may require drill pads to be fenced and signed, if necessary, to prevent both wildlife and Refuge visitors from gaining access to the sites. All appropriate warning signs should be placed along all sides of the fence.

11) As necessary, Thurston will notify the appropriate authorities (Utah Department of Transportation [UDOT] on highways and Utah Division of Wildlife Resources [UDWR] or USFWS on County and Refuge roads) of the presence of roadside carrion and ask that they remove the carrion as soon as possible. Carcasses may be covered in the interim to discourage scavenging by bald eagles and other raptors. However, only authorized personnel may touch or remove the carcasses.

Special Status Species

Yellow-billed Cuckoo

1) Thurston would not commence or conduct construction, drilling, or completion activities during the yellow-billed cuckoo nesting season (June 15th to August 31st).

2) Noise mitigation measures listed under "Wildlife" apply to the yellow-billed cuckoo, and will reduce noise disturbance to this species.

Colorado River Endangered Fish

1) Conservation measures listed under "Erosion and Sedimentation Control," " Spill Procedures," " Water Resources, Including Wetlands and Floodplains," and "Hazardous Materials and Solid Waste" apply to the Colorado River endangered fish and will reduce the potential for an accidental spill that could contaminate the Green River and associated wetlands, thus greatly reducing the likelihood that these species could be adversely affected.

Uintah Basin Hookless Cactus

1) Pre-project habitat assessments were completed across 100 percent of the project disturbance area within potential habitat prior to any ground-disturbing activities to determine if suitable Uinta Basin hookless cactus habitat was present. Within suitable habitat, site inventories were conducted to determine occupancy. No cactus were found within the project disturbance area or associated buffers. In addition, the following conservation measures that are part of the project design will reduce the likelihood that cactus could be affected:

    a) Limit new access routes created by the project;

    b) Roads and utilities should share common ROWs where possible;

    c) Vehicles will stay on designated routes and other cleared/approved areas; and

    d) All disturbed areas will be re-vegetated with native species comprised of species indigenous to the area and non-native species that are not likely to invade other areas.

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Water Resources, Including Wetlands and Floodplains

1) Thurston must provide the Refuge Manager or the Service AO a copy of the wetland determination/delineation that was issued by the U.S. Army Corps of Engineers (USACE) for the Project Area showing that none of the well pad locations or roads will impact wetland areas. The USACE would also need to be contacted if any wetlands may be disturbed by the proposed exploration activities;

2) The Operator will be responsible for providing all water needed for drilling operations from outside the Refuge. No wastewater will be discharged onto Refuge lands, ditches, or water bodies. The Operator will provide a containerized or temporary septic system for domestic sewage disposal during drilling operations, which must be removed upon completion of drilling. Use of portable toilets at the drill site or the installation of a temporary septic system, or similar treatment system or tanks, will be required for any trailer onsite. No surface discharge of septic system or portable toilet water is permitted. Septic tanks must be inspected weekly during operations and pumped as necessary. Upon completion of operations, the septic tanks must be pumped out, removed, and all material hauled away.

3) Thurston shall provide a detailed map of the Project Area and the location of the well pads and associated roads with respect to wetlands and waters of the United States.

4) Thurston would sample and test any known water wells located within a 0.50 mile radius up-gradient or immediately down-gradient of the oil extraction wells. The testing protocol will be developed jointly by the Service and Thurston.

5) Thurston's proposed casing program will be designed and implemented to adequately protect usable quality groundwater such that impacts to groundwater from drilling and production are not anticipated. Risks to groundwater from unanticipated downhole failures would be considered low, correctable, and manageable (O'Dell 2014).

Dust Abatement

1) Thurston will instruct its employees and contractors: (1) not to exceed 10 miles per hour on well pad access roads; and (2) not to exceed 25 miles per hour on the main Refuge road during construction, drilling/completion, production, or normal daily activities to discourage the generation of fugitive dust from traffic.

2) Dust levels on regularly traveled access routes must be kept to a minimum. During drilling and completion operations, Thurston will perform dust abatement measures on the main Refuge road and proposed access roads and/or well pads at least once a day or as needed, as determined by the Refuge Manager. Thurston must have a water truck and operator(s) readily available to perform dust abatement. Only water from an off-Refuge source will be allowed for dust suppression efforts. Magnesium water or an approved equivalent may be used as needed with prior approval from the Refuge Manager or authorized representative. Dust control measures must be implemented throughout the traveled areas of the Project Area, including construction sites and existing and proposed roads.

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Hazardous Materials and Solid Waste

1) A closed-loop mud and drill cuttings system must be used to minimize surrounding habitats. In addition, drill cuttings will be isolated in an AST during drilling. All cuttings and drilling fluids will be temporarily stored in tanks and then removed from the Refuge and disposed of off-site at an approved disposal facility;
2) Onsite disposal of produced water is prohibited. Produced water may only be disposed of at an offsite State-approved facility.
3) All toxic construction and equipment supplies and refuse (oil, grease, gasoline, diesel, paint, and other petrochemical derivatives) must be centrally stored. Wastes must be removed from the Refuge immediately following completion of drilling operations and disposed of properly. In the event of an accidental spill or discharge of oil, brine, or any other petrochemical substance, the Operator must immediately notify the Refuge Manager or authorized representative. The Operator must remove contaminated soils for proper disposal off Refuge and replace them with the same type soils or one specified and approved by the Refuge Manager or the Service AO. A site reclamation plan may be required by the Refuge Manager or the Service AO.
4) All disposable type materials and trash brought onto the Refuge or generated at the drill site must be removed from the Refuge on a weekly basis and upon completion of the drilling activities. The drill site and operational area must be kept free of debris and trash at all times. Trash must be contained securely at the drill site in such a manner (fully enclosed trash cages) to prevent trash from being spread by wind or wildlife. No trash may be disposed of or buried on the Refuge.
5) Pits, ponds, and/or open tanks are prohibited. Fully enclosed portable tanks must be used in circulating operations for the temporary storage of all drilling fluids, cuttings, mud, and contaminants. All drilling fluids, cuttings, mud, contaminants, portable tanks, and other equipment must be transported off the Refuge to a State-approved facility upon cessation of drilling activity. Onsite disposal of drilling fluids is prohibited.

Cultural Resources and Native American Concerns

1) Thurston has conducted a Class III cultural resource survey on lands that would be affected by surface-disturbing activities and will avoid all sites determined to be eligible to the NRHP or will perform mitigation as recommended by the cultural resource consultant and directed by the AO. The results of the survey were submitted to the Service.
2) In the event that unanticipated cultural resources are uncovered during surface-disturbing activities, procedures outlined in the Service's 614 FW 2, Survey and Identification Manual (USFWS 1992) and other applicable regulations would be followed. Thurston would suspend operations at the site and immediately contact the Service, who will arrange for a determination of eligibility in consultation with the State Historic Preservation Office (SHPO) and if necessary, will recommend a recovery or avoidance plan.

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3) If the proposed surface disturbance will affect an NRHP-eligible site, data recovery will be performed. Data recovery will include detailed recordation and archival research. The gathered information will be analyzed and described in a report that details the results of the investigation. The report will be submitted to the Service and the SHPO in Salt Lake City.

4) Thurston is responsible for informing all persons in the area who are associated with this project that they may be subject to prosecution for knowingly disturbing historic or archaeological sites or for collecting artifacts. All vehicular traffic, personnel movement, and construction and restoration activities would be confined to the areas evaluated in the pre-disturbance survey.

5) Thurston will educate its contractors and employees about the relevant Federal regulations intended to protect cultural resources. Furthermore, Thurston will educate staff and contractors regarding illegal collection or destruction of cultural resources. All vehicular traffic, personnel movement, construction and restoration activities will be confined to existing roads and to areas cleared by the site inventory unless mitigation measures are undertaken. In the event historic or archeological resources are uncovered during construction, work will stop immediately and the Service AO will be notified.

Paleontological Resources

1) Thurston has conducted paleontological surveys on lands that would be affected by surface-disturbing activities. Recommendations to minimize potential damage to paleontological resources (e.g., a permitted paleontologist will be present to monitor construction in certain circumstances) will be followed. The results of the survey were submitted to the Service with the APD for each well.

2) Thurston will educate its contractors and employees about the relevant Federal regulations intended to protect paleontological resources. All vehicular traffic, personnel movement, construction, and restoration activities will be confined to existing roads and to areas cleared by the site inventory unless mitigation measures are undertaken. If any potential paleontological resources are uncovered during construction, work will stop immediately in the area and the AO will be notified.

3) Per consultation with the Utah SHPO, a contracted paleontologist will be onsite when construction occurs.

4) If paleontological resources are uncovered during ground disturbing activities, Thurston would suspend all operations that would further disturb such materials and immediately contact the Authorized Officer, who will arrange for a determination of significance, and, if necessary, recommend a recovery or avoidance plan.

Aesthetics

1) Cuts and fills would be kept at a minimum and blended with the natural environment to minimize disturbance to visual resources;

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2) During all phases of this project, noise levels must be kept to a minimum and should not exceed the established industry standard above ambient day and nighttime noise levels. Thurston should make every effort to use electric pumping equipment (most quiet) during the production phase of this operation.

3) Thurston must implement the following measures and/or conditions to reduce the impacts on daytime and nighttime visual resources:

   a) All permanent (onsite 6 months or longer) structures either constructed or installed infrastructure must be painted a flat, non-reflective, earth-tone color (Covert Green), as determined by the Service AO, to blend with the natural landscape background.

   b) During pad construction, when erecting or disassembling the drilling rig, and during production, outdoor lighting should be kept to a minimum and turned off when not needed.

   c) Whenever possible, each series of lights must be either on a separate switch, timer, or motion sensor to allow the operator to tailor their use to activity in a specific area of the drill pad.

   d) All area lights must be downward pointing and fully shielded, with the exception that upward angled lighting would be used during the operation of the drilling rig in order to provide a safe working environment for drilling personnel. All lighting focused on a particular apparatus must be laterally shielded so that all light falls upon the intended work area and a minimum amount of light is emitted sideways or upward.

   e) Lights that are required by OSHA for emergencies must be linked to alarms so that they are only operational when an emergency situation arises.

   f) No light shall exceed 400 watts.

   g) All lamps must be ≤ 3500 ° Kelvin color temperature to reduce blue-rich light, which causes greater sky glow and is typically more attractive to wildlife.

   h) A Service designee will observe the facility from critical angles and distances. Excessively glaring lights must be shielded, re-aimed, or otherwise mitigated with an adaptive approach without compromising worker safety requirements.

   i) Following well completion, lights at the pumpjack area and tank battery area will be kept off except when needed for emergency maintenance.

   j) Lighting will be minimized where applicable unless safety is an issue.

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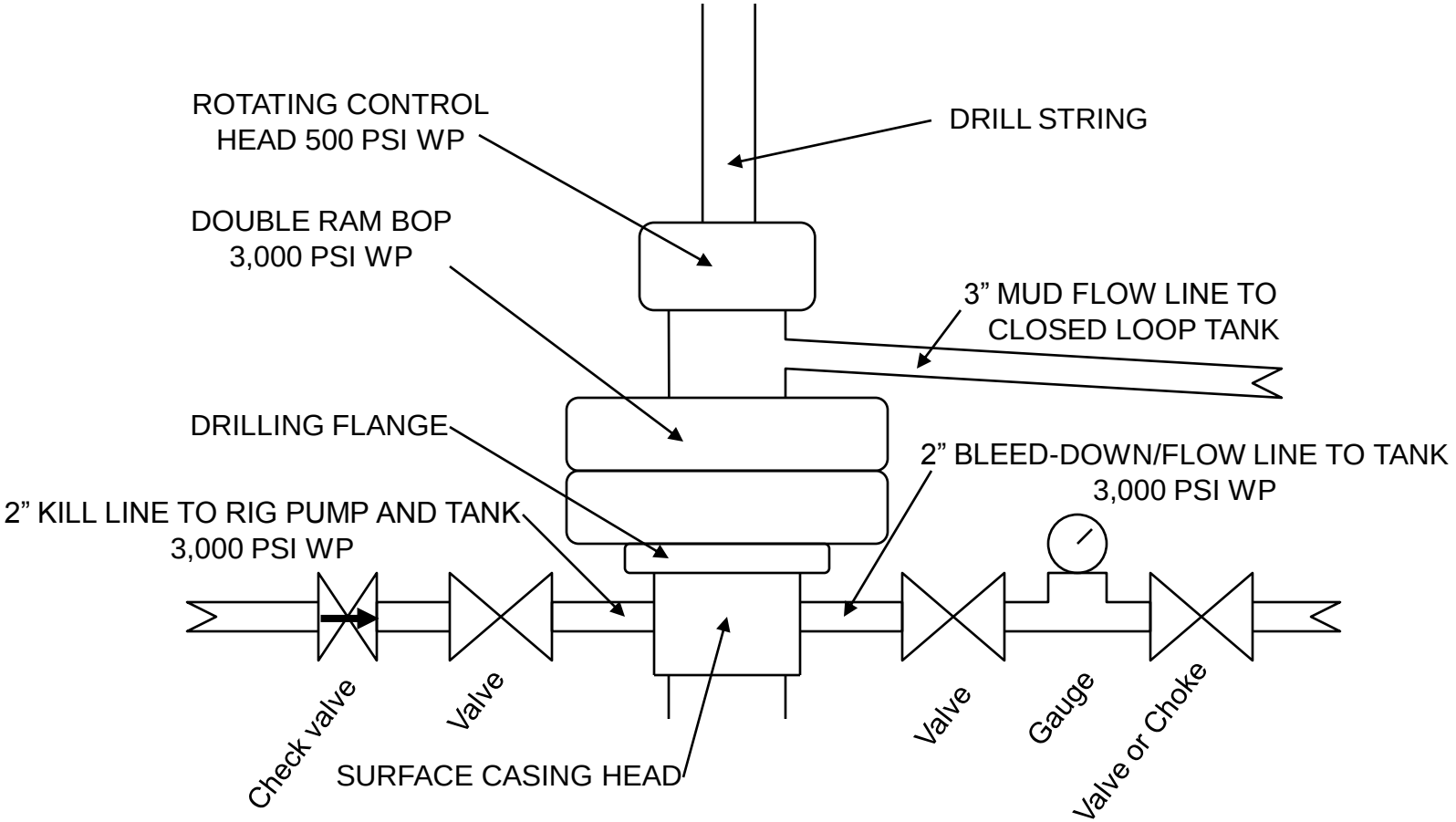
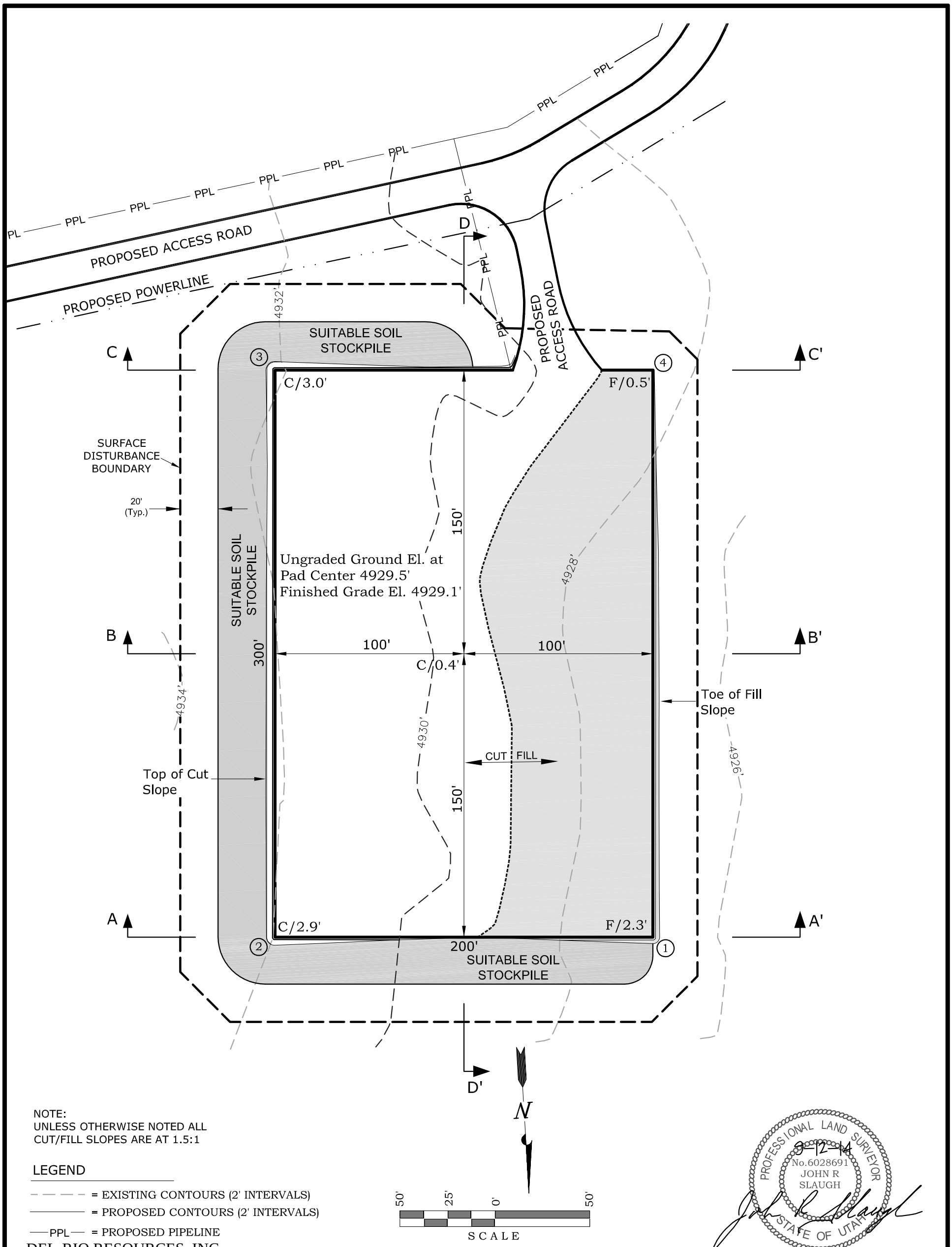
Schematic Diagram of Minimum BOPE for Thurston 12-31-7-21
Not drawn to scale



Thurston 12-31-7-21 Form 3 CDP Attachment B-BOPE Diagram

API Well Number: 43047554160000



NOTE:
UNLESS OTHERWISE NOTED ALL
CUT/FILL SLOPES ARE AT 1.5:1

LEGEND

- – – – = EXISTING CONTOURS (2' INTERVALS)
- ——— = PROPOSED CONTOURS (2' INTERVALS)
- —PPL— = PROPOSED PIPELINE

DEL-RIO RESOURCES, INC.

PROFESSIONAL LAND SURVEYOR
9-12-14
No.6028691
JOHN R SLAUGH
STATE OF UTAH

THURSTON ENERGY OPERATING COMPANY

PAD FOOTPRINT AREA	= ±1.377 ACRES
PAD DISTURBANCE AREA (Cut/Fill Slopes, Stockpiles)	= ±1.810 ACRES
AREA WITHIN SURFACE DISTURBANCE BOUNDARY	= ±2.365 ACRES

CUT SHEET

TANK BATTERY & SEPARATOR SITE LOCATED IN THE SW 1/4 NW 1/4 OF SECTION 36, T7S, R20E, S.L.B.&M, UINTAH COUNTY, UTAH.

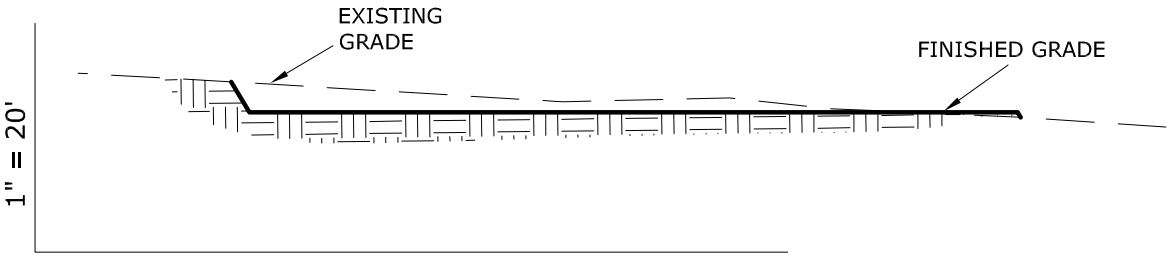
ESTIMATED EARTHWORK QUANTITIES
(No shrink or swell adjustments have been used)
(Expressed in Cubic Yards)

6" Topsoil Stripping = 1,170
Remaining Location = 1,330
TOTAL CUT = 2,500
FILL = 1,330
Excess Material = 0

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

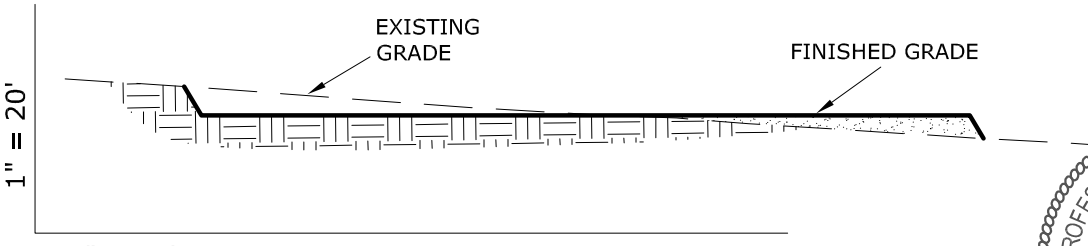
DATE SURVEYED: 8-18-14	SURVEYED BY: J.W.	SHEET NO: 1 OF 5
DATE DRAWN: 9-2-14	DRAWN BY: M.W.W.	
SCALE: 1" = 50'	Date Last Revised:	

CROSS SECTION D-D'

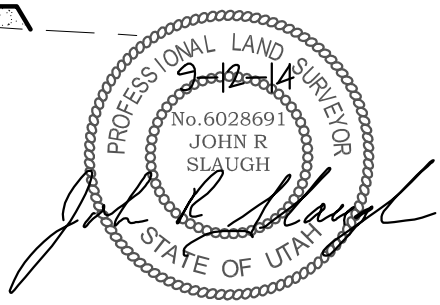


CROSS SECTION C-C'

CROSS SECTION B-B'



CROSS SECTION A-A'



DEL-RIO RESOURCES, INC.

~~THURSTON ENERGY OPERATING COMPANY~~

CROSS SECTION

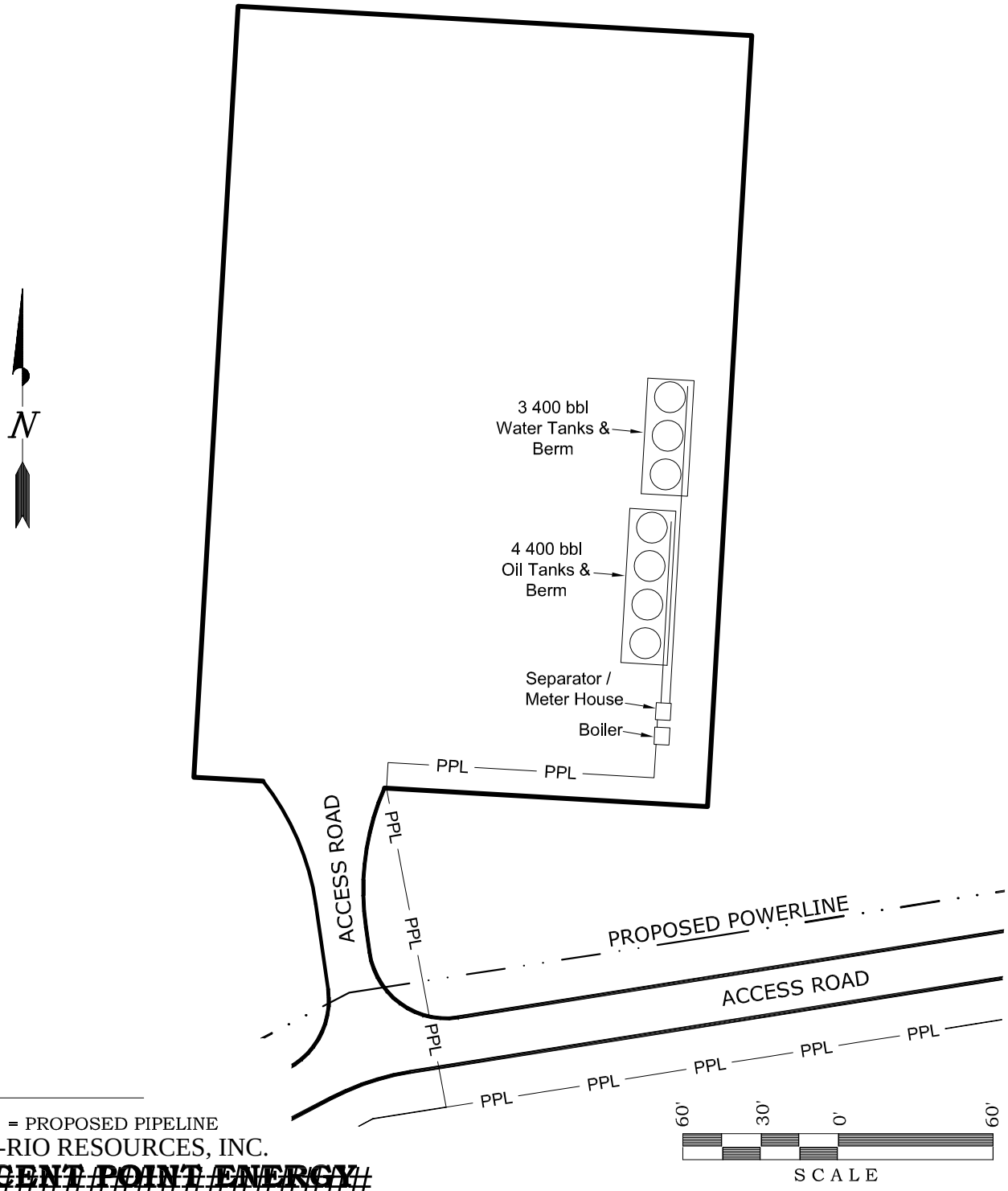
TANK BATTERY & SEPARATOR SITE LOCATED IN THE SW 1/4 NW 1/4 OF SECTION 36, T7S, R20E, S.L.B.&M, UINTAH COUNTY, UTAH.

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 8-18-14	SURVEYED BY: J.W.	SHEET NO: 2 OF 5
DATE DRAWN: 9-2-14	DRAWN BY: M.W.W.	
SCALE: 1" = 50'	Date Last Revised:	

RECEIVED: July 17, 2015

NOTE:
PRODUCTION EQUIPMENT LOCATION
COULD VARY DUE TO SITE AND OPERATION
EFFECTIVENESS.



LEGEND

—PPL— = PROPOSED PIPELINE

DEL-RIO RESOURCES, INC.

CRESCENT POINT ENERGY

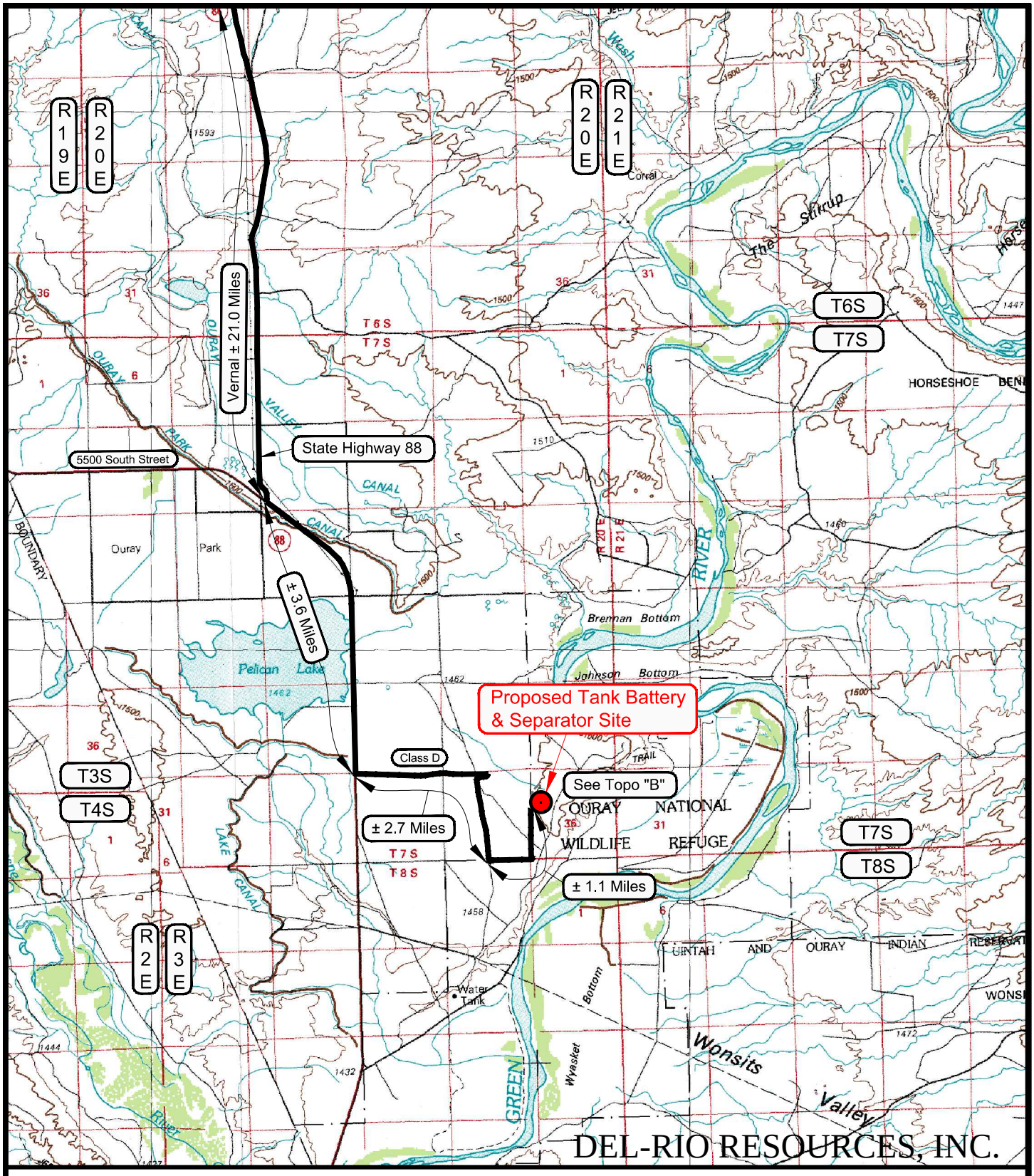
WELL PAD - FACILITY DIAGRAM

TANK BATTERY & SEPARATOR SITE LOCATED IN THE SW 1/4 NW 1/4 OF SECTION 36, T7S, R20E, S.L.B.&M, UINTAH COUNTY, UTAH.

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 8-18-14	SURVEYED BY: J.W.	SHEET NO: 3 OF 5
DATE DRAWN: 9-2-14	DRAWN BY: M.W.W.	
SCALE: 1" = 60'	Date Last Revised:	

RECEIVED: July 17, 2015



LEGEND

PROPOSED ACCESS ROAD
= SUBJECT WELL
= OTHER WELLS
= EXISTING ROAD
= EXISTING ROAD (TO BE IMPROVED)

B-5460 = COUNTY ROAD CLASS & NUMBER

N

~~THURSTON ENERGY OPERATING COMPANY~~

TANK BATTERY & SEPARATOR SITE LOCATED IN SECTION 36, T7S, R20E, S.L.B.&M, UINTAH COUNTY, UTAH.

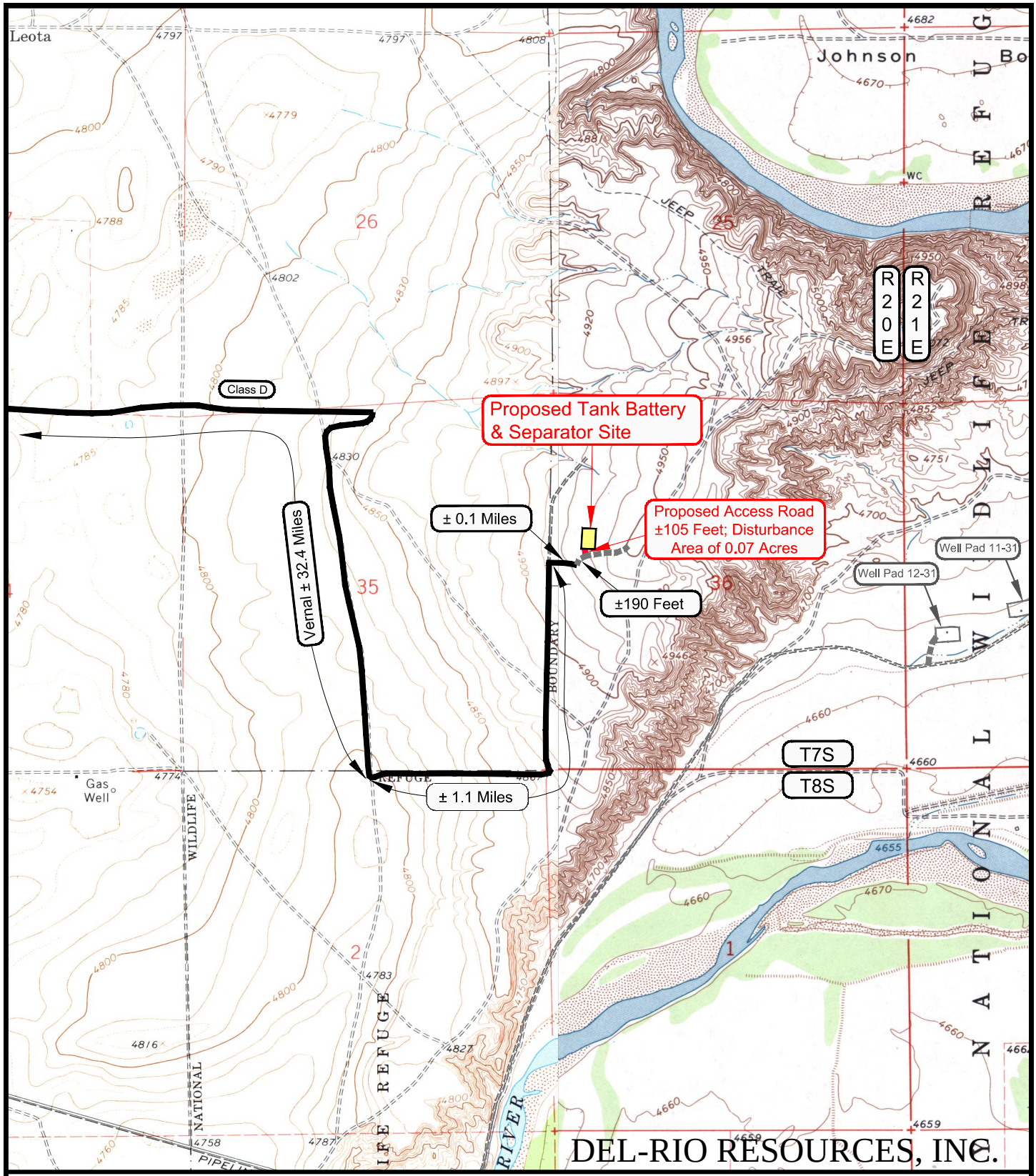
TOPOGRAPHIC MAP "A"	DATE SURVEYED: 8-18-14
	DATE DRAWN: 9-3-14
SCALE: 1:100,000 / DRAWN BY: M.W.W.	REVISED:

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

SHEET 4 OF 5

RECEIVED: July 17, 2015

API Well Number: 43047554160000



LEGEND

PROPOSED ACCESS ROAD
= SUBJECT WELL
= OTHER WELLS
= EXISTING ROAD
= EXISTING ROAD (TO BE IMPROVED)
= PROPOSED WELL

B-5460 = COUNTY ROAD CLASS & NUMBER
= LEASE LINE AND / OR PROPERTY LINE

N

~~THURSTON ENERGY OPERATING COMPANY~~

TANK BATTERY & SEPARATOR SITE LOCATED IN SECTION 36, T7S, R20E, S.L.B.&M, UINTAH COUNTY, UTAH.

TOPOGRAPHIC MAP "B"	DATE SURVEYED: 8-18-14
	DATE DRAWN: 9-3-14
SCALE: 1" = 2000' / DRAWN BY: M.W.W.	REVISED:

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

SHEET 5 OF 5

RECEIVED: July 17, 2015

DEL-RIO RESOURCES, INC.

~~THURSTON ENERGY OPERATING COMPANY~~

TANK & SEPARATOR SITE

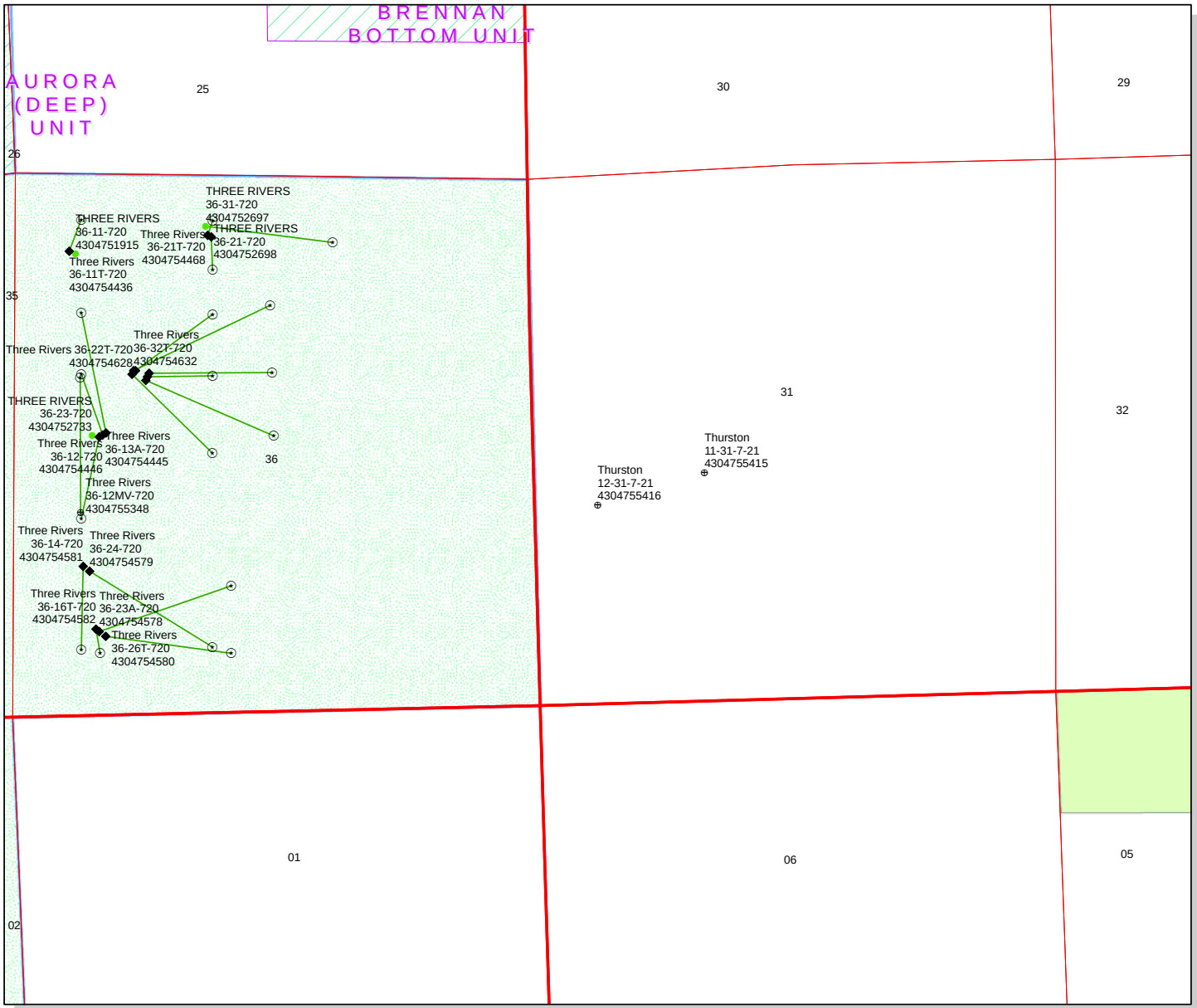
Section 36, T7S, R20E, S.L.B.&M.

Proceed in a westerly direction from Vernal, Utah along U.S. Highway 40 approximately 13.9 miles to the junction of State Highway 88. Exit left and proceed in a southerly direction along State Highway 88 approximately 7.1 miles to the intersection of 5500 South Street. Continue along State Highway 88 approximately 3.6 miles to a Class D County Road to the East. Exit left and proceed in an easterly then southerly direction along the Class D County Road approximately 2.7 miles to an existing service road to the East. Exit left and proceed in an easterly then northerly direction along the service road approximately 1.1 miles to a second service road to the East. Exit right and proceed in an easterly direction along the second service road approximately 0.1 miles to a proposed oil field access road. Follow road flags in a northeasterly direction along the proposed oil field access road approximately 190 feet to the Tank and Separator Site proposed access road. Follow road flags in a northerly direction approximately 105 feet to the proposed Tank and Separator Site.

Total distance from Vernal, Utah to the proposed Tank and Separator Site is approximately 28.6 miles in a southerly direction.

RECEIVED: July 17, 2015

API Well Number: 43047554160000



API Number: 4304755416

Well Name: Thurston 12-31-7-21

Township: T07.0S Range: R21.0E Section: 31 Meridian: S

Operator: DEL-RIO RESOURCES INC

Map Prepared: 7/23/2015
Map Produced by Diana Mason

Wells Query

Status

- APD - Aproved Permit
- DRL - Spuded (Drilling Commenced)
- GIW - Gas Injection
- GS - Gas Storage
- LOC - New Location
- OPS - Operation Suspended
- PA - Plugged Abandoned
- PGW - Producing Gas Well
- POW - Producing Oil Well
- SGW - Shut-in Gas Well
- SOW - Shut-in Oil Well
- TA - Temp. Abandoned
- TW - Test Well
- WDW - Water Disposal
- WIW - Water Injection Well
- WSW - Water Supply Well

Units

STATUS

- ACTIVE
- EXPLORATORY
- GAS STORAGE
- NF PP OIL
- NF SECONDARY
- PI OIL
- PP GAS
- PP GEOTHERML
- PP OIL
- SECONDARY
- TERMINATED

Fields

STATUS

- Unknown
- ABANDONED
- ACTIVE
- COMBINED
- INACTIVE
- STORAGE
- TERMINATED

1,250 625 0 1,250 Feet

1:12,470

RECEIVED: July 23, 2015

API Well Number: 43047554160000

BOPE REVIEW DEL-RIO RESOURCES INC Thurston 12-31-7-21 43047554160000

Well Name	DEL-RIO RESOURCES INC Thurston 12-31-7-21 43047554160000			
String	COND	SURF	PROD	
Casing Size(")	16.000	8.625	5.500	
Setting Depth (TVD)	80	1050	9000	
Previous Shoe Setting Depth (TVD)	0	80	1050	
Max Mud Weight (ppg)	8.3	8.4	8.8	
BOPE Proposed (psi)	0	1000	3000	
Casing Internal Yield (psi)	1640	2950	5320	
Operators Max Anticipated Pressure (psi)	3900		8.3	

Calculations	COND String	16.000	"
Max BHP (psi)	.052*Setting Depth*MW=	35	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	25	NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	17	NO
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	17	NO
Required Casing/BOPE Test Pressure=		80	psi
*Max Pressure Allowed @ Previous Casing Shoe=		0	psi *Assumes 1psi/ft frac gradient

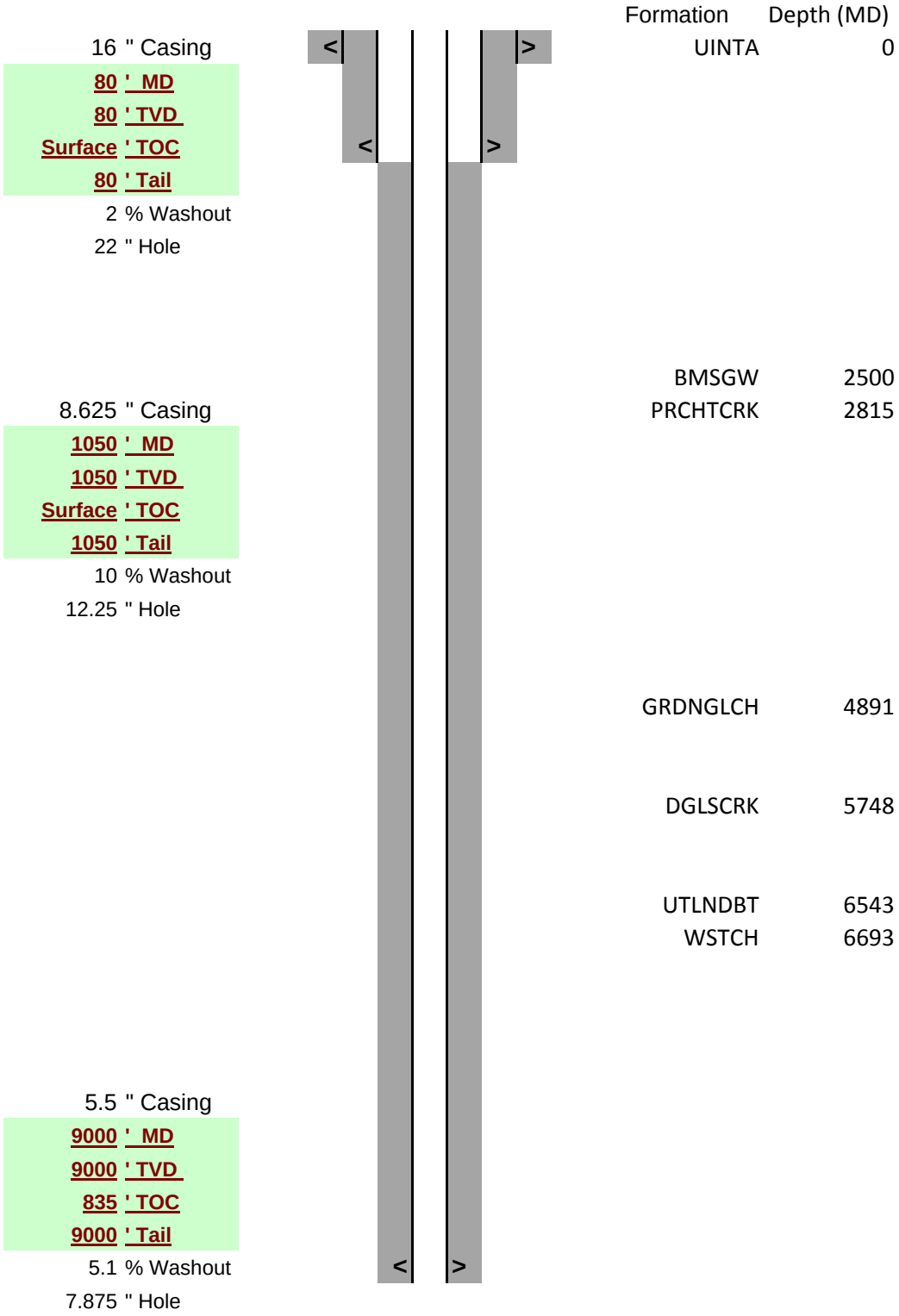
Calculations	SURF String	8.625	"
Max BHP (psi)	.052*Setting Depth*MW=	459	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	333	YES rotating head
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	228	YES OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	246	NO OK
Required Casing/BOPE Test Pressure=		1050	psi
*Max Pressure Allowed @ Previous Casing Shoe=		80	psi *Assumes 1psi/ft frac gradient

Calculations	PROD String	5.500	"
Max BHP (psi)	.052*Setting Depth*MW=	4118	
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	3038	NO 3M rams, annular listed as optional
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	2138	YES OK
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	2369	NO OK
Required Casing/BOPE Test Pressure=		3000	psi
*Max Pressure Allowed @ Previous Casing Shoe=		1050	psi *Assumes 1psi/ft frac gradient

Calculations	String		"
Max BHP (psi)	.052*Setting Depth*MW=		
			BOPE Adequate For Drilling And Setting Casing at Depth?
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO
			*Can Full Expected Pressure Be Held At Previous Shoe?
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO
Required Casing/BOPE Test Pressure=			psi
*Max Pressure Allowed @ Previous Casing Shoe=			psi *Assumes 1psi/ft frac gradient

RECEIVED: August 06, 2015

DEL-RIO RESOURCES INC
Thurston 12-31-7-21
43047554160000



Formation	Depth (MD)
UINTA	0
BMSGW	2500
PRCHTCRK	2815
GRDNGLCH	4891
DGLSCRK	5748
UTLNDBT	6543
WSTCH	6693

One WIW 2.8 mi N, Brennan 11

RECEIVED: August 06, 2015

DEL-RIO RESOURCES INC
Thurston 12-31-7-21
43047554160000

				1.125			1		1.8			
	MASP	Collapse Strength (psi)	Collapse Load (psi)	Collapse DF	Burst Strength (psi)	Burst Load (psi)	Burst DF	Tension Strength (kips)	Tension DF	Neutral Point (ft)	Tension Air (kips)	Tension Buoyed (kips)
16 " Casing	25	630	34	18.26	1640	80	20.50	439	84.42	70	5.2	4.6
	MW (ppg)	Internal Grad. (psi)	Backup Mud (ppg)	Internal Mud (ppg)	Max Shoe Pressure (psi)*	CSG Wt (lbs/ft)	CSG Grade	CSG Collar	Cement Lead (sx)	Lead Yield	Cement Tail (sx)	Tail Yield
	8.3	0.12			245	65.0	H-40	STC	93	1.18		
	MASP	Collapse Strength (psi)	Collapse Load (psi)	Collapse DF	Burst Strength (psi)	Burst Load (psi)	Burst DF	Tension Strength (kips)	Tension DF	Neutral Point (ft)	Tension Air (kips)	Tension Buoyed (kips)
8.625 " Casing	227	1370	458	2.99	2950	1050	2.81	244	11.08	915	25.2	22.0
	MW (ppg)	Internal Grad. (psi)	Backup Mud (ppg)	Internal Mud (ppg)	Max Shoe Pressure (psi)*	CSG Wt (lbs/ft)	CSG Grade	CSG Collar	Cement Lead (sx)	Lead Yield	Cement Tail (sx)	Tail Yield
	8.4	0.22			2365	24.0	J-55	STC	417	1.56		
	MASP	Collapse Strength (psi)	Collapse Load (psi)	Collapse DF	Burst Strength (psi)	Burst Load (psi)	Burst DF	Tension Strength (kips)	Tension DF	Neutral Point (ft)	Tension Air (kips)	Tension Buoyed (kips)
5.5 " Casing	0	4910	4114	1.19	5320	4114	1.29	247	1.86	7789	153.0	132.6
	MW (ppg)	Internal Grad. (psi)	Backup Mud (ppg)	Internal Mud (ppg)	Max Shoe Pressure (psi)*	CSG Wt (lbs/ft)	CSG Grade	CSG Collar	Cement Lead (sx)	Lead Yield	Cement Tail (sx)	Tail Yield
	8.8	0.22			4114	17.0	J-55	LTC	1371	1.24		

RECEIVED: August 06, 2015

Application for Permit to Drill
Statement of Basis
Utah Division of Oil, Gas and Mining

APD No	API WellNo	Status	Well Type	Surf Owner	CBM
11266	43047554160000	LOCKED	OW	F	No
Operator	DEL-RIO RESOURCES INC		**Surface Owner-APD**		
Well Name	Thurston 12-31-7-21		**Unit**		
Field	UNDESIGNATED		**Type of Work**	DRILL	
Location	NWSW 31 7S 21E S 1995 FSL 639 FWL GPS Coord (UTM) 618764E 4446987N				

Geologic Statement of Basis

Del-Rio proposes to set 80 feet of conductor and 700 feet of surface pipe, cemented to surface. The depth to the base of the moderately saline water at this location is estimated to be at approximately 2,500 feet. A search of Division of Water Rights records shows 20 water wells within a 10,000 foot radius of the center of Section 31. Wells in the area are listed for EOR makeup water, domestic, wildlife and stock watering. Depths are listed for only 3 wells at 39, 40 and 125 feet. Listed wells probably produce from near surface alluvium and the Uinta Formation. The surface formation at this site is the Uinta Formation. The Uinta Formation is made up of interbedded shales and sandstones. The sandstones are mostly lenticular and discontinuous and should not be a significant source of useable ground water. Production casing cement should be brought up to or above the base of the moderately saline ground water in order to isolate it from fresher water uphole.

Brad Hill — **APD Evaluator**

7/27/2015 — **Date / Time**

Surface Statement of Basis

The surface rights at the proposed location are owned by the Federal Government. The operator is responsible for obtaining all necessary surface permits and rights-of-way.

Brad Hill — **Onsite Evaluator**

7/27/2015 — **Date / Time**

Conditions of Approval / Application for Permit to Drill

Category	Condition
	None

RECEIVED: August 10, 2015

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 7/17/2015
API NO. ASSIGNED: 43047554160000
WELL NAME: Thurston 12-31-7-21
OPERATOR: DEL-RIO RESOURCES INC (N0330)
PHONE NUMBER: 970 254-3114
CONTACT: David L. Allin

PROPOSED LOCATION: NWSW 31 070S 210E
Permit Tech Review: ☑

SURFACE: 1995 FSL 0639 FWL
Engineering Review: ☑

BOTTOM: 1995 FSL 0639 FWL
Geology Review: ☑

COUNTY: UINTAH
LATITUDE: 40.16485
LONGITUDE: -109.60532
UTM SURF EASTINGS: 618764.00
NORTHINGS: 4446987.00
FIELD NAME: UNDESIGNATED
LEASE TYPE: 3 - State
LEASE NUMBER: ML-52016
PROPOSED PRODUCING FORMATION(S): WASATCH
SURFACE OWNER: 1 - Federal
COALBED METHANE: NO

RECEIVED AND/OR REVIEWED:

- ☑ **PLAT**
- ☑ **Bond:** STATE/FEE - 8734397758
- ☐ **Potash**
- ☐ **Oil Shale 190-5**
- ☐ **Oil Shale 190-3**
- ☐ **Oil Shale 190-13**
- ☑ **Water Permit:** Municipal
- ☐ **RDCC Review:**
- ☐ **Fee Surface Agreement**
- ☐ **Intent to Commingle**

Commingling Approved

LOCATION AND SITING:

- ☐ **R649-2-3.**

Unit:

- ☐ **R649-3-2. General**
- ☐ **R649-3-3. Exception**
- ☑ **Drilling Unit**

Board Cause No: R649-3-2
Effective Date:
Siting:

- ☐ **R649-3-11. Directional Drill**

Comments: Presite Completed

Stipulations:
4 - Federal Approval - dmason
5 - Statement of Basis - bhill
12 - Cement Volume (3) - daynedoucet
23 - Spacing - dmason

RECEIVED: August 10, 2015

GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Division of Oil, Gas and Mining
JOHN R. BAZA
Division Director

Permit To Drill
****

Well Name: Thurston 12-31-7-21
API Well Number: 43047554160000
Lease Number: ML-52016
Surface Owner: FEDERAL
Approval Date: 8/10/2015

Issued to:
DEL-RIO RESOURCES INC, P.O. Box 459, Vernal, UT 84078

Authority:
Pursuant to Utah Code Ann. 40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of R649-3-2. The expected producing formation or pool is the WASATCH Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

Duration:
This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

General:
Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

Conditions of Approval:
State approval of this well does not supercede the required federal approval, which must be obtained prior to drilling.

This proposed well is located in an area for which drilling units (well spacing patterns) have not been established through an order of the Board of Oil, Gas and Mining (the “Board”). In order to avoid the possibility of waste or injury to correlative rights, the operator is requested, once the well has been drilled, completed, and has produced, to analyze geological and engineering data generated therefrom, as well as any similar data from surrounding areas if available. As soon as is practicable after completion of its analysis, the operator is requested to seek an appropriate order from the Board establishing drilling and spacing units in conformance with such analysis by filing a Request for Agency Action with the Board.

Compliance with the Conditions of Approval/Application for Permit to Drill

outlined in the Statement of Basis (copy attached).

Cement volume for the 5-1/2" production string shall be determined from actual hole diameter in order to place the top of cement above the 8.625" casing shoe as indicated in the submitted drilling plan.

Additional Approvals:
The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan - contact Dustin Doucet
- Significant plug back of the well - contact Dustin Doucet
- Plug and abandonment of the well - contact Dustin Doucet

Notification Requirements:
The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well - contact Carol Daniels
  OR
  submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website
  at http://oilgas.ogm.utah.gov
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to cementing or testing casing - contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program
  - contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well - contact Dan Jarvis

Contact Information:
The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 - office
- Dustin Doucet 801-538-5281 - office
  801-733-0983 - after office hours
- Dan Jarvis 801-538-5338 - office
  801-231-8956 - after office hours

Reporting Requirements:
All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) - due within 5 days of spudding the well
- Monthly Status Report (Form 9) - due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) - due prior to implementation
- Written Notice of Emergency Changes (Form 9) - due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) - due prior to implementation
- Report of Water Encountered (Form 7) - due within 30 days after completion

• Well Completion Report (Form 8) - due within 30 days after completion or plugging

Approved By:

For John Rogers
Associate Director, Oil & Gas

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5.LEASE DESIGNATION AND SERIAL NUMBER: ML-52016

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7.UNIT or CA AGREEMENT NAME:

1. TYPE OF WELL Oil Well

8. WELL NAME and NUMBER: Thurston 12-31-7-21

2. NAME OF OPERATOR: DEL-RIO RESOURCES INC

9. API NUMBER: 43047554160000

3. ADDRESS OF OPERATOR: P.O. Box 459 , Vernal, UT, 84078 **PHONE NUMBER:** 970 254-3114 Ext

9. FIELD and POOL or WILDCAT: UNDESIGNATED

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 1995 FSL 0639 FWL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NWSW Section: 31 Township: 07.0S Range: 21.0E Meridian: S

COUNTY: UINTAH

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
✓ NOTICE OF INTENT Approximate date work will start: 9/15/2016	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
☐ SPUD REPORT Date of Spud:	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ DRILLING REPORT Report Date:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	✓ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Operator requests extension of this APD for another year.

Approved by the
Utah Division of
Oil, Gas and Mining
June 20, 2016

Date:

By:

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
David L. Allin	970 254-3114	Vice President/Exploration Mgr
SIGNATURE N/A		**DATE** 6/17/2016

RECEIVED: Jun. 17, 2016

The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

Electronic Permitting System - Sundry Notices

Request for Permit Extension Validation Well Number 43047554160000

API: 43047554160000
Well Name: Thurston 12-31-7-21
Location: 1995 FSL 0639 FWL QTR NWSW SEC 31 TWNP 070S RNG 210E MER S
Company Permit Issued to: DEL-RIO RESOURCES INC
Date Original Permit Issued: 8/10/2015

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

- **If located on private land, has the ownership changed, if so, has the surface agreement been updated?** ○ **Yes** ◉ **No**
- **Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location?** ○ **Yes** ◉ **No**
- **Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well?** ○ **Yes** ◉ **No**
- **Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location?** ○ **Yes** ◉ **No**
- **Has the approved source of water for drilling changed?** ○ **Yes** ◉ **No**
- **Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation?** ○ **Yes** ◉ **No**
- **Is bonding still in place, which covers this proposed well?** ◉ **Yes** ○ **No**

Signature: David L. Allin **Date:** 6/17/2016
Title: Vice President/Exploration Mgr **Representing:** DEL-RIO RESOURCES INC

RECEIVED: Jun. 17, 2016